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THE MODELMAKER

FOR THOSE
INTERESTED IN MAKING

WORKING MODELS

Edited by
W. EDMUNDS SPON

VOLUME III

SPON & CHAMBERLAIN
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1926

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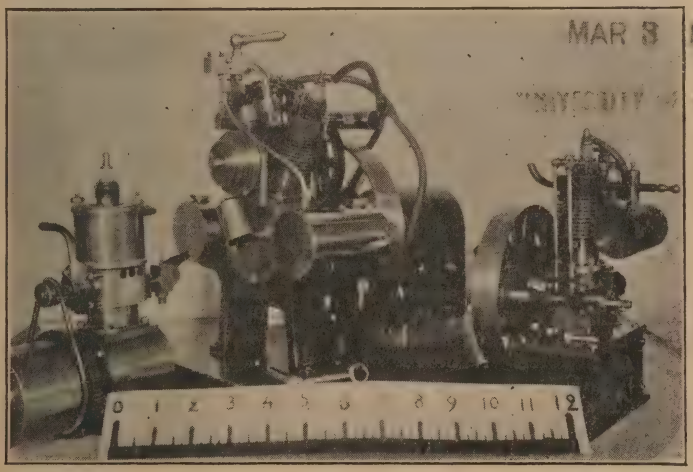

THREE MODEL GAS ENGINES—A SINGLE CYLINDER, AIR-COOLED; TWIN CYLINDER, AIR-COOLED; AND A MARINE TYPE, WATER-COOLED

BUILT BY MR. EMIL VOLLENWEIDER

THE MODELMAKER

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OUR FOREWORD

In glancing over a pile of correspondence the writer notes the variety of requests. One reader asks, "Where can I obtain a set of castings for a Model Corliss Engine?" Another wants a Garden Locomotive, with about 12" drivers for a gauge of about 15". Another asks where could he get drawings and castings for a road traction engine. Another wants an air turbine for high-pressure compressed air, and one a shaper to fit on a Lathe; and many other articles too numerous to mention in this limited space.

These requests bring to the writer's mind a Sunday afternoon call upon a gentleman, the owner of a house on Long Island that had a big garret, consisting of four finished rooms heaped up with a most miscellaneous collection of articles. A barrel of railway tracks; several aeroplane models; a model trolley car fitted with only two wheels to run on a single rail, driven by an electro-gyroscopic device; two luna telescopes; five motion picture projectors; stacks of scientific magazines and books. The owner then took the writer into the basement, where he had a regular machine shop. Here were finished models, partly finished models, and sets of castings. A very fine model of a single cylinder marine type gas engine, with all fittings, carburetta, spark coil and starting device, that ran almost noiselessly. Also a finished 2-cylinder gas engine. He also had several hundred cylinders and parts of the gas engine.

He explained that he wished to dispose of many of these articles, as his co-worker, a mechanical engineer and inventor, who had lived with him for many years, had recently died. My host was a scientific investigator. The two men had worked out many problems betwen them making models of their inventions.

Many of their models, no doubt, would be readily purchased if the various items could be brought to the attention of our readers.

G. B., a gentleman who always enjoys his summer vacations near Cape Cod, told this little anecdote:

One day he was passing the local antiquity-junk shop when, glancing into the open door, he saw a familiar object standing on end against the wall that induced him to enter the store and make a closer examination. It was a half-body model of a sailing vessel, mounted on a panel of wood, in excellent condition.

The old storekeeper, remark-

ing he had some more of them things in the barn, left the store. He returned in a few minutes carrying two similar models, both looking rather dilapidated. He said that was all he could find, the missus must have chopped up the others for firewood.

"Can you use them?"

"What do you want for this one?" said G. B.

The storekeeper mentioned a ridiculously small price.

"Why," said G. B., "to anyone interested that would be cheap at $50.00."

The storekeeper shook his head incredulously.

A few days later G. B. was passing the store when the old man stopped him and, with a smile, said:

"A party in yachting togs came here after you left and asked me what I wanted for that model thing. I told him fifty plunks. He took it to the door and looked it over carefully, then he said alright. He produced a roll of bills and pealed off fifty, then he carried it off.

"The next day he came again, with another gent in yachting togs, and that gent bought the other two."

Looking at G. B., he said, "I guess you know something about them model things."

'Yup, you can't fool me on those things," said G. B. "That was a half-model of one of Donald McKay's clippers."

"My word! I ought to have asked that gent a hundred."

How many homes are there in this great country that contain similar hoarding places, where long-forgotten models of ships or engines, or mechanical devices are waiting to be resurrected and placed in the hands of those who would appraise them at their true value.

WHAT HAVE YOU IN YOUR GARRET?

In the October issue of The Modelmaker for 1925, at the request of the Postmaster of New York, we inserted a notice requesting all our customers to be very careful in writing their name and to give us a full postal address. We have had quite a few complaints from subscribers to the effect that they are not getting their numbers regularly. Upon investigation we find that in most cases it is because the subscriber has moved or changed his address and has not notified us to that effect. We particularly wish to stress this point, viz., notify us as soon as you possibly can your change of address so that we can alter our records and prevent the losses of copies in the mail.

The Model Railway News, principal contents for December issue: G. N. Southerden's Gauge I Clockwork Line. C. L. Bennet's "O" Gauge Solid-fuel Tank Engine. Gauge "O" Engine Shed. Rev. H. A. Turner's "OO" Gauge Line. Ballasting Model Railways. Distant Control of Steam Locomotive Models. Model Level Crossing Gates. "OO" Gauge Developments. Lieut. H. Awde, R. E. Model Railway System in Germany. Electric Locomotive Types for Modeling. General View of the Glover-Merriam Railway. Our Mail Bag. Club Notes. Answers to Correspondence. Trade Topics. With title page and index for Volume 1.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF THE MODELMAKER, published monthly at New York, N. Y., for October 1, 1925.

State of New York } ss.:
County of New York }

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared W. Edmunds Spon, who, having been duly sworn according to law, deposes and says that he is the Editor and Business Manager of the Modelmaker and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations printed on the reverse of this form, to wit:

1. That the names and addresses of the publishers, editor, managing editor, and business manager are:

Publishers, Spon & Chamberlain, 120 Liberty St., New York, N. Y. Editor, W. Edmunds Spon, 120 Liberty St., New York, N. Y. Managing Editor, none; Business Manager, W. Edmunds Spon, 120 Liberty Street, New York, N. Y.

The owners are W. Edmunds Spon, 120 Liberty St., New York; Wm. Chamberlain, 120 Liberty St., New York.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation, has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

W. EDMUNDS SPON,
Editor and Business Manager.

Sworn to and subscribed before me this 29th day of September, 1925,

ELVIRA H. PFLUGER,
Notary Public, New York Co., New York.

(My commission expires March 30, 1927.)
[Seal]

Certificate filed in New York Co. No. 857. Reg. No. 7073.

Mr. Milton Cronkhite, care of Liberty Electric Corporation, Stanford, Conn., who is a very old customer of ours and an enthusiastic modelmaker for a good many years, dropped in to pay us a call the other day. He informed us that he had not done much model work for several years, but this fall he has become again very much interested in this hobby. He wished to know if we could put him in touch with any model fans in his locality. We have a good many readers in Connecticut, and we hope they will get in touch with this gentleman and try and arrange an occasional meeting. After a few gatherings they may see their way clear to form a model engineers society for their mutual benefit.

Mr. E. Vollenweider, of 1022 14th Street, Sacramento, Calif., would like to get in touch with any model enthusiasts in his vicinity, with a view to having an occasional meeting and if possible forming a modelmakers club for mutual benefit. We hope he will hear from some of our many Californian readers.

MODEL GAS ENGINES

By EMIL VOLLENWEIDER

It was through the courtesy of my employer, Mr. Harry D. Kinnear, automotive electrical engineer, of Sacramento, that I was able to build these engines, with the use of his tools and lathe during my spare time.

I received the copy of the October number of the "Modelmaker," and it contains several good articles on modelmaking as well as much needed information.

The picture on the front cover of this issue shows my efforts as a modelmaker. The three model gasoline engines were constructed by me during the past year. First was the single-cylinder, four-cycle engine. After that I tried a two-cylinder motor, using more or less the same principles of construction. The last model is a single-cylinder, two-cycle, water-cooled marine engine. All of these engines run very well, and in many ways surprised me. With the exception of the platform for the twin cylinder, no castings were used. All parts are machined out of the solid.

Following is the data for each engine:

Single-Cylinder, 4-Cycle, Air-Cooled Engine

Bore 27/32", stroke 1", highest measured R.P.M. over 7000; driving a generator will develop four amps at 6 volts. Cooling is effected by blades built in fly wheel; battery ignition; coil and condenser are located in the base; cylinder is made of cast iron; cylinder head of steel; piston of hard aluminum; valves of tool steel; main bearings, Norma E-15; arranged side by side, spaced about 1"; crankshaft is made of tool steel; assembled. I have tested this engine's usefulness for model airplanes and boats and find the following: Driving an aerial propeller 16" diameter, 24" pitch, a speed of 2000 R.P.M. was attained. One filling of gas, about 2 ounces, was sufficient for a full-speed run of 1 hour and 20 minutes. Equipping the power plant with a boat propeller of 4" diameter, 10" pitch, turning the same over at one-half engine speed, the R.P.M. attained for submerged propeller were 1950. Due to very little space in the cylinder head, I had to make the valves rather small. The ports are ¼" round. The engine is oiled by a drop oiler with pipe line to cylinder wall. The piston is fitted with two eccentric cast iron rings, which at first gave a little trouble while turning them. Patience is always the greatest help in model making and is rewarded by a smooth-running, desirable product.

In this engine I use a simple mixing valve with adjustable plunger to control the air intake. The camshaft is also assembled, as is the flywheel. Between the core and the rim there are four spokes and four cooling blades. The crankcase consist of two halves, filed and turned out of steel, 2" x 2" x 1".

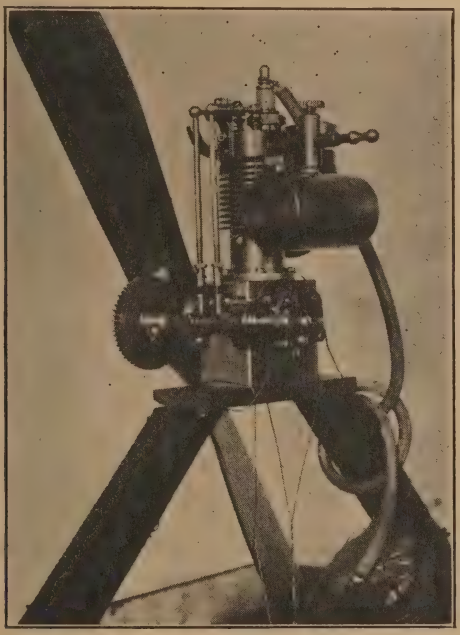
2-Cylinder, 4-Cycle Engine—Air Cooled

The angle between cylinders is 45°. Main bearings are Norma E-15 ball bearings; camshaft bearings are E-12. Plain bearings in the connecting rods. Stroke 1", bore 27/32". The pistons are of hard aluminum, each fitted with three rings made of cast iron; cylinders and heads are turned out of solid cast iron bar and the crankcase out of cold rolled steel three inches in diameter. The connecting rods work side by side on a counterbalanced tool steel crank. The cylinders are offset. A Z.E.V. Bosch magneto supplies the spark. The small timing gear is fitted between the E-15 bearings on crankshaft; the assembled camshaft, mounted on two bearing supports screwed to crankcase, is located between the cylinders. Bronze is uesd for push rod guide, which is fastened to top of camshaft bearing supports. The rocker arm supports are screwed to the cylinder heads. It was rather a difficult job to make a carbureter which would function equally well on low and high speeds. After building several types, I finally succeeded. The simple product consists of an automatic air check valve, needle valve and throttle. Splash oiling was adapted in this engine and made a breather necessary. The motor is started with a hand crank, engaging on camshaft; ten ounces of ordinary gasoline are sufficient for a two-and-one-half-hours' run. Oil consumption for this period is about one-half ounce. The highest R.P.M. obtained without heavy rim on flywheel was 8000; with rim on, as shown in photos, only 6000, but it will idle down to about 200.

2-Cycle, Water-Cooled Marine Engine

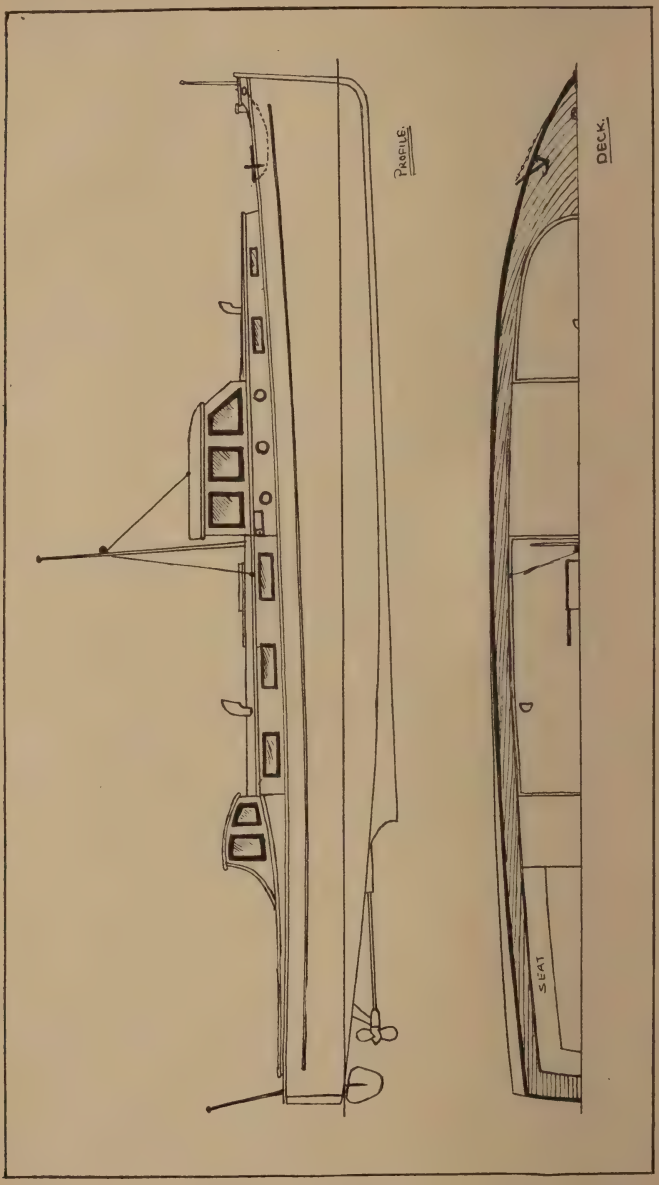
1¼" bore, 1¼" stroke, highest R.P.M. 4300; cylinder head, crankcase, flanges, piston and flywheel are turned out of one cast iron bar 2¾" x 12". The circular water pump is built in the cylinder and is driven from the flywheel by a belt. Ports are machined. Piston is fitted with three rings, two on top and one below; connecting rod is steel, bushed with bronze bearing; crankshaft is counterbalanced; main bearing is 2½" long and extends into flywheel. I have used battery and magneto ignition. The latter seems

to be far better. A simple mixing valve, with adjustable air control, takes care of carburation. Gasoline mixed with oil, eight to one, is used. I have also built a radiator for this engine, but it is just a little too small to be used without a fan. So far no power tests have been made, but, judging from speed and performance, it seems to be there.



GAS ENGINE FOR MODEL AEROPLANE

We are preparing to bind up some sets of Volume I, Model Railway News, and if any of our readers would like to have their volume bound up, mail it to us at once and we shall be glad to include your volume in our binding order. If you have not sent in your subscription for 1926, let us have it at your earliest convenience, to enable us to complete our mailing List at as early a date as possible.


PROFILE
DECK
SEAT

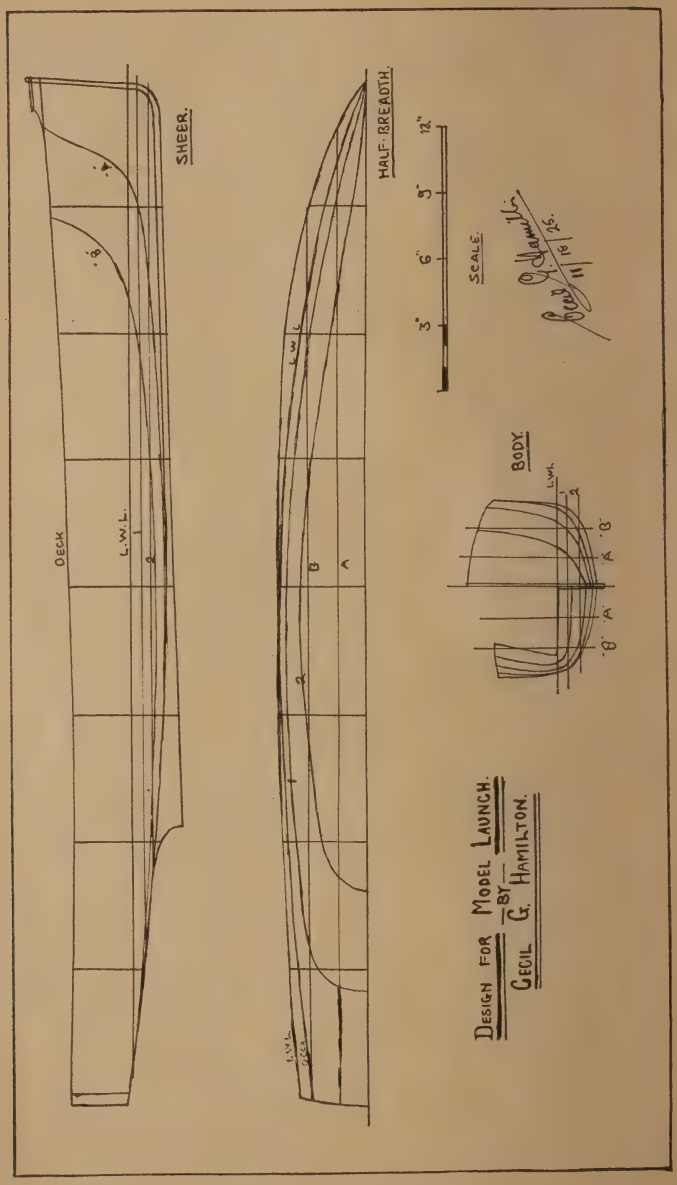
MODEL SHIPBUILDING NOTES

A Design for a Model Launch

By CECIL G. HAMILTON

Having received a number of queries lately about drawings for model launches and motor boats, and thinking it would be of interest to readers of the "Modelmaker," the following design was prepared. While following no particular prototype, the general outline is typical of this class of ship. The model measures 46 inches over all, with a beam of 8 inches and a mean draft of 2 inches. The sections are well rounded at the bilge, this feature making it much easier for plank building the hull, or for metal construction. Fittings have been reduced to the minimum, and the sheer given a pronounced sweep; this, with the broad, flat stern, gives a very pleasing effect. It will be noted that from the mid-section to the stern the L. W. L. is much broader than the deck; this is known as the tumble home of the frames. At the bow there is the flag pole, one single bollard and one anchor with stock. The cabin cover extends from No. 1 section to the cockpit and is entirely covered, while on top of it, just aft of the mid-section is arranged the wheelhouse and a short mast. A seat is fitted all round the cockpit, and at the front is a windshield. Two cleats are fitted on each side of the deck, a flag pole at the stern, and a sliding hatch on top of the cabin cover, just aft of the mast. The rudder is of spade form and underhung, while the propeller is three bladed, 2 inches diameter. The usual coloring used on this class of ship is white top side, with red or green bottom, while the cabin cover and wheelhouse are finished to a mahogany tone, also the mast and flag poles. A fine gold line round the top sides complete the model. Following the usual policy with these designs, no machinery details have been given, as these will be attended to later.

Mr. Angell has given us the following particulars about an engine and boiler he is working on: It is a two-cylinder, single-acting uniflow piston-valves marine steam engine. Bore 7/8" x 53/64", size of base 3" x 2", height about 4", with ball-bearing crankshaft. To operate on high pressure super-heated steam, approximately 200 lbs. It will have a water tube pot boiler, with super-heater. The barrel of the boiler is about 10" x 2¼", with a 150 square inches heating service to boiler and about 25 square inches heating service for super-heater. Fired with a blow torch. We hope to be able to give a fuller description of this engine when it is finished.


SHEER.
DECK
L.W.L.
HALF-BREADTH.
SCALE.
3" 6" 9" 12"
BODY.
Geo. G. Hamilton
11 1st 25.
DESIGN FOR MODEL LAUNCH.
BY
CECIL G. HAMILTON.

½" SCALE MOUNTAIN 4—8—2 TYPE COAL FIRED LOCOMOTIVE

By HENRY O. HAVEMEYER, Jr.

The engine is modeled after Baltimore and Ohio R. R. Company No. 5500, the largest passenger locomotive in the world, from plans kindly furnished by Col. George H. Emerson, Chief of Motive Power of that road. It is planned to have the model an exact working miniature of the prototype, with all fittings working and all construction according to standard locomotive practice. Two cylinders, 1⅛" stroke and 11/16" bore, working at 100 lbs. pressure, are expected to furnish tractive effort of 17 lbs. Weight of engine complete, exclusive of tender, will be about 60 lbs. Length, 30"; with tender, 48" long.

Construction Details.—Frame, pedestal binders, frame crossties cut from ¼" cold rolled steel, fastened together with hexagon head steel bolts and studs. Auxiliary frames extending from behind rear drivers tail brace, and frame angles of ⅛" steel, frames held together by the customary rivets. Pilot beam, equalizers, spring saddles, links and jibs all cut from steel stock. Correct laminated springs with 16 leaves are of .022" thick spring steel. Axleboxes of brass ½" thick, slotted for pedestals and of correct pattern. Trailing truck of Hodges pattern, with standard springs, brasses and equalizers. Pilot truck of standard pattern. All other details cut from steel stock, no castings being used in the frame construction.

Wheels of cast iron, drivers 3¼" dia., trailing 1 11/16" dia., pilot 1 7/16" dia., all mounted on axles of steel and pinned. Cylinders of cast iron, steam being distributed by piston valves. Alligator pattern crosshead and slides of steel. Valve motion full Walschaert all cut from mild steel. Connecting and driving rods all of steel fluted, with correct brasses, of phosphor bronze, secured by hexagon wedges and pins.

Boiler of locomotive, fire tube type, built entirely of copper. Firebox 6" long by 4⅜" wide at bottom, water legs ¼", inner firebox of 1/16" copper and outer wrapper, back plate, tube plates and throat plate correctly flanged of 3/32" copper. Barrel of 3¾" dia.—10 gauge tube 23" long. Tubes seven in number, ½" dia. 20 gauge cu. screwed and expanded at tubeplate and expanded at smokebox end. All rivets ⅛" dia. in double rows staggered. Two roof bars

fitted. 5/32" dia. bronze staybolts, 64 in number, maintain distance between inner and outer shells. Superheater of steel tube fitted. Grate area 19.6 square inches, tube heating surface 178.50 sq. in., firebox heating surface 44.3 sq. in. Total heating surface 222.84 sq. in. Pressure carried, 100 lbs.

Fittings.—Throttle valve in dome, with regulator on back plate, water gauge, pressure gauge, blower valve, blow-off valve, 2 check valves forward, 2 injectors, whistle valve, steam sanding gear valve, steam brake valve, train valve, shifting valve, displacement lubricator valve.

Thus far the frames have been finished and assembled with driving boxes and wheels finished and spring rigging laid out. The boiler is being built by Tim Kennedy, a boilermaker, in the shops of the railroad with which the writer is connected. The wheels, cylinders and pilot truck are the work of Mr. Frank Birch of Detroit. It is expected to have the engine on the tracks in the spring, after which a train of 10 all-steel Pullman cars will be built, making up a complete train over 40 feet long. Accurate to the range in the dining car. The tender is of Vanderbilt type.

Mr. Edward Hoffman, 10 Gourley Street, Passaic, N. J., is very much interested in model work, especially locomotives. He has a good screw cutting lathe, with a well-equipped worshop for this class of work. He would very much like to get in touch with any enthusiasts in his neighborhood, with a view to having an occasional meeting and discussing models. Having had some experience in this work he would be glad to help any other brother modelmakers if in his power.

Mr. George Kuhr, of 218 Division Street, Bellevue, Ky., is very much interested in modelmaking and he would likek to get in touch with any other modelmakers residing within a reasonable distance of his city, with a view to having an occasional meeting and in the hope that he will get sufficient replies to enable him to form a small model engineers club. We hope all our Kentucky readers will get in touch with this gentleman.

Correspondence

To the Editor Modelmaker:

I am just about finishing a model of the Flying Cloud, about 30" W. L., which I think is a beauty. I wish some genius would dope out some way to sail a square rigged ship so she would tack. I am not enough of a real sailor to be able to do that.

With best wishes for your further success, I am,

Sincerely yours,

J. W. C. CORBUSIER.

Hudson, Ohio.

(If any of our readers can give this gentleman any information or suggestions for sailing square riggers I am sure that he will appreciate it very much.—Ed.)

We have just received a most appreciative letter from Mr. J. W. C. Corbusier. A short description and illustration of his fine model of the S. S. Aquitania was in the November issue of The Modelmaker. This enthusiastic model boat builder informs us he has nearly completed a model of the famous American Clipper, "The Flying Cloud." The prototype of this model was built by Donald McKay, one of the most famous shipbuilders of his time. We expect to give a description and illustration of this model in a future issue of The Modelmaker, and we hope it will encourage some of our readers to build models of some of McKay's other Clippers and help to perpetuate the memory of one of our really great Americans. A man who put his very heart and soul into his work. A man who demanded only the very best, in workmanship, materials and design, and who was always striving in each new ship to make a finer vessel than any he yet had built. That is the spirit we would like to see in all of our readers. Aim for the very best that is in you and never be satisfied with just "good enough." Cultivate skill in workmanship, perseverance and infinite patience. You will then be justly proud of your models.

Mr. H. Meier, of 49 Bower Street, Jersey City, N. J., is very much interested in the construction of models of old ships. He would like to get in touch with any fellow-enthusiasts who may be residents of his vicinity. He would also like to know where he can procure scale fittings for model ships.

Mr. Frank Birch writes us that he has quite an assortment of model locomotive drive wheels, and he would like to hear from any of our readers who are contemplating the building of a model locomotive.

The Elveron Speed Boat Club, of 13 Bentley Avenue, Jersey City, N. J., would like to hear from anyone in their neighborhood who is interested in the construction of model power boats, with a view to a get-together meeting with the object of planning for a series of model power boat races next year. We know there are a good many model boat builders in New Jersey, and we hope they will get in touch with this club with the above object in view.

Mr. G. H. Stegmann has in preparation a full-sized drawing of the lines of the model of the U. S. S. Frigate "Constitution," from which he will be able to obtain blueprints. He has also promised to write an article on the details and fittings for this model, with scale drawings. This additional information will be of value to all of our readers who have decided to construct a similar model. Considerable interest is being taken in the construction of models of old-time ships. "Old Ironsides" should especially appeal to Americans interested in this line of work.

Mr. Ralph J. Kelley, of Trinidad, Col., writes us he is building a Coventry locomotive, 2½-inch gauge, and if there are any model enthusiasts in his vicinity he would like to get in touch with them, with a view to a friendly meeting once in a while.

MODEL LOCOMOTIVE RACES

By C. O. LILJEGREN

Airplanes, cars, motor and sailing yachts owe their present high perfection primarily to racing—why not have races for locomotives? It is a matter of railroad history that Stephenson won the first locomotive race ever held, but the Swede, John Ericson, was a close second, and but for the breaking of a small part of the gear might have won. In that case, the Monitor would perhaps not have been built, but it is idle to speculate.

To my knowledge, model locomotive races have never been held, and indeed the difficulties are many when you consider that as a rule no one can make the run aboard the locomotive. Of course, big models have been built, both in this country and abroad, big enough to carry many men. Such models cost a good deal of money, and tracks to accommodate them are not cheap.

For these reasons some outside braking arrangement to stop the train is necessary. It could consist of a number of weights attached to kind of a harness for the locomotive to run into, or fitted with some kind of snubbers, one on each side.

Then there is the matter of rating the locomotives, and the scale. As for the latter, I should suggest both ½-inch and 1-inch scale, with gauges of 2½ and 5 ins., although these are not strictly to scale. For rating steam locomotives, the same formulas can be used as for full-size cars, and for gasoline and Diesel locomotives, American Power Boat Association has developed formulas that could be used with advantage.

After being rated, the locomotives should be handicapped by extra loads, just as in horse racing, each locomotive to pull at least one car, if found practicable.

Regarding the track, provision should be made for two or more trains to race at one time, which add tremendously to the interest. This means that two or more tracks must be laid, all of the same length and form. Besides, there should be a home stretch, or straight part near the finish line, where the trans can run parallel. Crossings, at least grade crossings, are too risky and should be avoided. It seems, then, that the best track should have horseshoe shape, two or more tracks all pointing the same way. Of course, the track need not be level, although, since there can be no braking down hill, too steep grades are to be avoided.

Clearly, oval tracks would be best suited for racing but for the necessary two crossings, on the curved part of the tracks, too. Each track need not be level, although, since there can be no braking insuring equal tracks and fair play. In this manner any length of a course can be obtained simply by running so many laps, an undeniable advantage of the oval track. Unfortunately, there are not room for two trains to pass each other on the same track, as in auto car racing, hence two tracks must be used to get real thrills.

By these lines the writer hopes to influence some Model Society to lay such tracks, and to inaugurate racing for locomotives, steam as well as internal combustion, both of which may be seen in increasing numbers in the near future.

BOOK REVIEWS

Steamboat Days, by F. E. Dayton; illustration by J. W. Adams; xi + 436 pages, one colored plate and 88 illust; 8¾ in. x 6 in.; cloth; $5.00.

We believe this book will interest many of our readers, because it contains a considerable amount of historical and practical data relating to the development of steam navigation in the United States, commencing from the earliest attempts to the present day, giving the names of steamers, dates of construction, builders and owners ,with the names and a short account of the pioners of the steamship industry. Many interesting items and amusing anecdotes are included. While the general make-up of the book is excellent, the quality of the illustrations is decidedly poor.

FOR SALE

Bench Drill—Build your own. Complete working drawings, 24 x 36 in., postpaid $1.50. Free list of Modelmakers Supplies. P. W. Cornelius, 2457 E. Washington St., Indianapolis, Ind.

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Patterns—Wood and Metal, Models and Small Castings. Special attention to modelmakers wants. J. H. Koch, 103 Summit Ave., Linwood, Pa.

Morgan twenty-foot glider parts. Precision machine work for models a specialty. F. W. Icken, Morsemere, N. J.

Constructional Blueprints — 24" Model Racing Yacht, 1 sheet, $2.25. Perry's Flagship, the famous brig Niagara, which won the battle of Lake Erie. Length of hull, 25¼". 3 large sheets, $5.00. These blueprints give all details and measurements to build and rig above models. A. R. Ferris, 284 East 151st St., Cleveland, Ohio.

HELP WANTED

Help Wanted—Mechanics to make old-time wooden ship models. Also riggers and hand painters. Write, Becker, 4135 Third Ave., Bronx, New York.

FOR SALE

Gears and Model Supplies of every description, catalogue 5 cents. Experimental Supply House, Box 10, Station Y, New York City.

Horizontal Flue Boiler and Blow Torch, fully equipped. Also two-cycle, single acting, slide valve engine. Send for particulars. Robert Engel, Ridgewood, New Jersey.

Locomotive Drive Wheels, all sizes, from 1⅜" dia., to 4¼". 1"x1" vertical engine castings and parts, $10. 1"x1" horizontal engine castings and parts, $10. Passenger and freight car truck castings. Hexagon steel bolts, Nos. 2-56, 5-40, 7-32, 10-32, taps to suit. List 5 cents. Frank Birch, General Delivery, Highland Park, Mich.

Gas Engines—The three Gas Engines shown on the front page of this Modelmaker. Write for particulars to Mr. E. Vollenweider, 1022 14th St., Sacramento, Calif.

Blue Prints of Ships for Modelmakers, send for circular. G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

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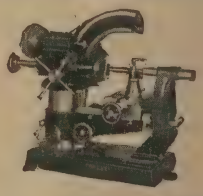

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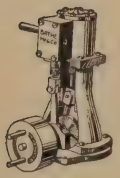

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THE MODELMAKER

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Vol. III, No. 2 FEBRUARY, 1926 10 cents

MAR 8 1926

MR. A. R. FERRIS'S MODEL 24" RACING YACHT

THE MODELMAKER

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OUR FOREWORD

The boiler is, without question, the most important part of a steam power plant, for without its product—steam—the engine would not function.

Much time and scientific experimentation has been devoted to the development and improvement of the steam boiler, and in consequence the shapes and types, and designs, are very numerous.

Three of the most important essentials are : Strength and durability, high efficiency in steam production, and low cost for fuel.

The water tube boiler may be cited as one of the most efficient type, but it is an expensive piece of apparatus, and if not properly taken care of the cost of upkeep and repairs may be very considerable.

One of the most difficult problems for the engineer is the removal of scale from the tubes, for if this is not properly attended to, corrosion may set in and that means leaky tubes with loss of valuable time in making repairs.

A Mr. Atmos, a Swedish engineer, has made a radical inovation in boiler designs. He has constructed a boiler of a tube about 8 in. dia. and about 11 ft. long. This is revolved at a speed of 300 R. P. M. The water is pumped in at one end and the steam taken out at the other. The tube is kept about half full of water allowing space for the steam to generate. The centrifugal action of the tube throws a film of water against the hot tube wall ensuing quick steaming. This boiler has been in successful operation for nearly three years producing 700 lbs. of steam per sq. in.

Here is an opportunity for scientific experimentation that should appeal to some of our readers.

As no details of construction were given it leaves the Modelmaker free to commence his work from his own particular view point.

The following details would have to be determined by actual experiment.

Material—Brass, hard drawn copper or steel tubing.

Dimensions—Thickness of wall, diameter, and length of tube.

Ends—Form of end pieces.

Method of Fixing Ends—Welded, riveted and hard soldered, or threaded and screwed on. It might be advisable to make one end piece to screw on so that the tube could be readily opened and cleaned out.

Trunnions—These could be part of the end pieces, but with hollow centers for water pipe inlet and steam supply pipe.

Pipe Joints—These could be of the ball and socket type ground to a tight fit to prevent water, or seam leakage.

Gears—One for tube and one to fit on shaft of motive power.

Fire Box—Approximately ¾ the length of tube and fired with hard fuel, row of burners, blow torch, or primus burner.

Framing for Boiler—Could be made of light T iron, the ends of uprights bolted to a heavy piece of sheet iron as a base plate. The frame work arranged so that it could be made wider and longer if desired to accommodate tubes of varying diameters and lengths. A pillow block secured on the base plate at each end of frame bored out at the top for bearing brasses and fitted with bearing caps.

Boiler Casing—The frame work could be covered with asbestos sheeting and sheet iron, but the form of casing would depend somewhat on what type of power plant the boiler was intended to operate.

R. P. M.—The right speed to rotate the tube could be decided upon after actual tests under steam.

Condenser—A surface condenser might be added if the boiler was to be used on a model boat. The condensed water going back into the supply tank. This would give the boiler a larger steaming radius.

Lubrication—The type of lubricators best suited to the special conditions.

Boiler Braces—There might be two or three longitudinal rods to hold the ends firmly.

We should be very pleased to receive comments or constructive criticisms upon the above subject from any of our readers.

Mr. G. M. Clarke, of 432 N. Huron Street, Ypsilanti, Mich., is the happy possessor of a very neat and well equipped workshop, where he occupies his spare time at his hobby, building models. He is now at work on a ¾ in. scale locomotive. He wrote us he would be very pleased to meet anyone interested in this delightful pastime and has asked the Modelmaker to put him in touch with any of our readers who may be residents of his city, or nearby towns. We hope all of our readers up his way will get in touch with this gentleman with a view to an occasional meeting. These notices have been the means of getting many little groups together in different parts of the States.

Model Railway News, contents of January issue 1926. Mr. Beal's "00" Gauge West Midland Railway. Too much Model Railway? An "00" Gauge Wagon Tippler for a Model Mineral Depot. Railway Planning Suggestions. Notes on Model Loads. Signs for Permanent-way. Speed Restrictions. A New Zealand Model Locomotive, 2" Gauge 4—6—0. Why Not Narrow-gauge Prototypes? Photographing the Model Railway. Designs for Model "0" Gauge. Mr. H. R. Norman's 1 N. L. R. Line. Our Mailbag. Answers to Correspondence. With the Clubs. With this issue Volume 2 commences. Published monthly, annual subscription $2.50. No single numbers sold.

Hull Mounted on Bare Board Ready for Carving

MODEL SAIL BOAT

By MR. A. R. FERRIS.

The hull of this 24" racing yacht was made by the "Bread and Butter" method from 5 white pine boards each of which had its corresponding waterline or outline of the shape of the hull at that particular section marked on it from a templet. Each board was sawed out to its particular outline on a scroll saw. The 5 boards were then screwed together one on top of another, but not glued as yet. The assembled boards, making a rough outline of the hull were then mounted on a base board. This base board had 5 lines drawn across it and for each line a templet had been made to the correct shape of the hull at that particular section. The lines were numbered and each templet numbered with the same number as its corresponding line. The hull was then carved out by cutting off the sharp corners of the board and applying the templets as needed.

When the hull was nearly worked to shape with the gouge it was gone over with a small block plane, wood file and No. 2 sandpaper. The hull was then dissembled and the inside of each board sawed out leaving the thickness of the walls approx. ¼".

Hull was then screwed together, LePages glue having been applied to the boards and left to dry for 24 hours. It was then gone over with No. 1 sand paper and then with No. 00. Hull was then mounted on a cradle the remaining surplus wood cut out leaving the walls 3/16" thick. The shear was then cut and the inside given two coats of paint.

This method of making a hull I have found to be very satisfactory as it requires less work than carving from a solid block. This is due to the fact that when the sharp corners of the boards are cut off, which is readily done, the hull is very nearly to the shape it will be when finished.

The deck was made from white pine ⅛" thick on which parallel lines were drawn on with a scratch awl and straight edge to represent planking. Deck was then nailed on with brads two ribs with a slight curve having been fitted in before.

The rigging is as simple as possible, fish line being used and rigging hooks and bouses being used to attach the sails. Sails and masts can be taken down in a few minutes. The rudder and keel are lead weighted.

Hull Nearly Carved Outside showing Templet #3 in Place.

The model has proved to be a very steady sailer and makes a fine appearance on the water. The principal dimensions are as follows:

Hull, 24" long, 5⅛ beam, 6⅛ deep.

Masts and Spars

Main mast, 26" long, 7/16 dia. at large end tapered to 3/16 at small end.

Topmast, 7¾" long, ¼ dia. at middle.

Main boom, 18" long, ⅜ at middle tapered to ¼ at each end.

Gaff, 10¾" long.

Bowsprit, 13" long.

Topsail yard, jib boom and foresail boom all 6" long.

Four sails: Main sail, top sail, jib and fore sails.

Model Engineer, principal contents for December 3, 10, 17, 24, 31. Interchangeable Vice-Jaws for Milling Operations. A 2½" Gauge 4—4—0 Locomotive. Clock Repair work. Making a pair of Lathe Standard and Treadle. Making a Small Drilling Pad. Making Condenser Ferrules. The Importance of Modelmaking and Model Engineering. Bevel Gear Control for Lathe Topslide. Locomotive Prototypes and Economical Battery-charging Rectifier. Thermos Stats. A Model 2½" Gauge —4—4J2. Electrically-driven Tank Locomotive. Automatic Railway Signalling. Cutting Approximate Metric Pitches. Self-acting Brake Mechanism for Lathes. Model Locomotive Building. The Model Battleship "Hopeful." A Portable Dividing Head. Practical Telephone Installations in private houses. A Column of "Live Steam" by "L. B. S. C." Wireless Telephony and Submarine. Light Engineering Equipment and Supplies. Workshop Topics. Domestic Engineering. An Electric Light Supply Failure. Model Marine Notes. Recent Inventions. A 2" by 2" Horizontal Steam Engine. Queries and Replies. Practical Letters from Our Readers. Acetylene Welding and the Model Engineer. Reviving Dry Batteries. Society and Club Doings. Titlepage and Index for Volume 53.

We understand a Model Yacht Club has recently been organized in Providence, R. I., and amongst its members are some very skilled model yacht builders. We wish them every success.

Mr. A. A. Singer recently held another meeting at his office, 15 Moore Street, New York. There were fifteen model enthusiasts present. Mr. Lozier exhibited one of his steam locomotives and some cars which were very much admired. Mr. Singer expects to hold another meeting in February and is in hopes that he will get sufficient support to warrant the formation of a Model Engineers Club. He would be glad to hear from any of our readers residing in New York or vicinity.

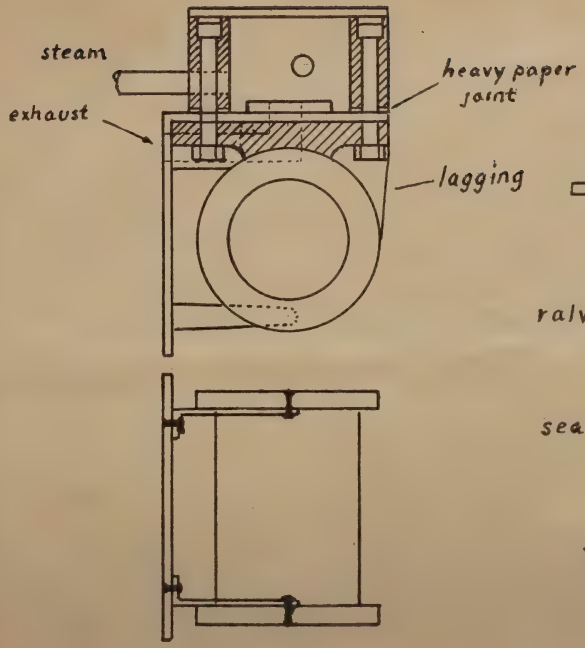


Fig1 Cylinder

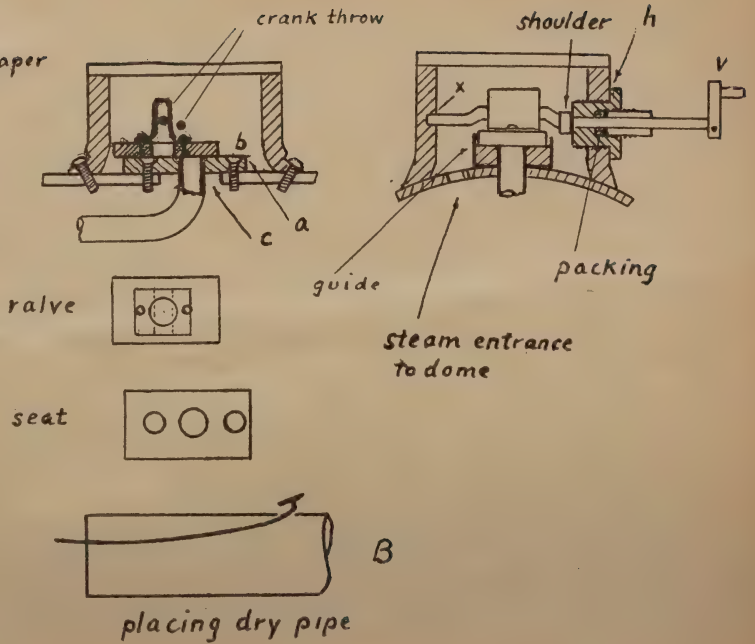


Fig 2 Throttle

NOTES ON ½" SCALE LOCOMOTIVE

By W. G. LANDON

I am building a half-inch scale locomotive. The nucleus was a set of castings purchased from Carson (England) in 1912, for a North Eastern Atlantic type. The work, after many long interruptions, is at last nearing completion.

The following are notes on a few oddities incorporated in the design. After machining the wheels and the cylinders, and cutting out the frames, it was decided to make an American locomotive. I wanted to use Walshaert's valve gear. Did not wish to attempt piston valves, and did not want the incorrect combination of a piston valve casing with a valve gear arranged for outside admission.

The New Haven Atlantic type engines, in their original condition, fulfilled these conditions, and as I was familiar with the motive power on this road, I adopted this design.

The castings supplied were for outside cylinders, with valves between the frames. A piece of 1/16" sheet brass was bent to a right angle and the flange, which in English practice would be bolted to the frames, was, after tinning, riveted on one face of the angle piece, an opening being cut for the valve seat to project through. Braces were attached to the cylindr flanges. A block of brass, with center cut out, formed the steam chest and was bolted on.

Dummy springs are fitted, but they form a very live part of the equalizing system, which is according to the Pennsylvania E-6s class, i.e. the truck is equalized with the forward drivers, and the main drivers with the trailer. With this arrangement any predetermined weight may be put upon each set of wheels, with the assurance that it will not vary. The truck is also self-centering as any side motion swings the lower end of rod, (a) Fig. 3, in an arc and puts greater weight thereon, with the tendency to return to central position.

Several years ago I had great trouble, the front truck of 4—4—0 engine leaving the rails through lack of weight. Equalizing the drivers and thus throwing weight on the front part of the engine on the truck effected a cure.

Fig. 2 shows a throttle, which externally is an imitation of the Chambers throttle and internally is of the slide valve type. The seat has the dry pipe expanded and sweated in and holes (b) bored and countersunk for screws. The dry pipe, with seat, is put in posi-

tion before the dome. The pipe is annealed and bent in a long curve, Fig. 2-B, so that it can be pushed through the large hole C and thence through its hole in front tube plate. Then the seat can be pushed down and secured with screws. A U piece is riveted on the valve. Its height must allow crank in vertical position to pass through it for assembly. The valve is then ground in on the seat.

Assemble as follows: The valve is placed in position, the dome having been fixed. The crank shaft is put in gland, packing lint put on, and gland packed. The operating arm (V) is then secured by a small pin. The whole can then be inserted through hole (H) in the dome. This hole must be large enough to permit the crank to pass. The crank is held vertically, while the gland nut is screwed into dome. Washers may be needed at the shoulder to keep the other end of crank in its bearing (X). The outside throttle connections

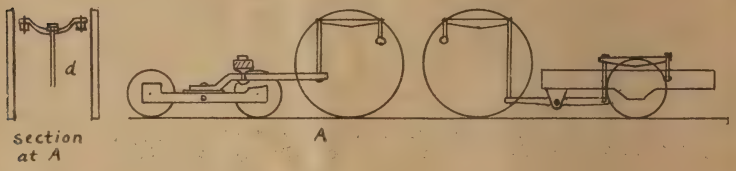


Fig 3 Equalizers

form an easy means of control without ungainly extension handles in the cab.

I presume a good many modellers use my method of measurement, but I do not remember seeing it described. Whether I am using a photograph, or a drawing, the first thing I do is to make a scale of feet and inches to correspond. If no dimensions are given, the scale may be computed from some known factor, such as diameter of driving wheel, or extreme height. Next I construct a ruler the scale I am going to model; for instance for 17/32: 20 spaces, or so, each 17/32 which would be 20 ft. and one space divided into 12 parts, each being a scale inch. The measurements are then taken from the drawing of the original, supplemented, if possible, by a table of leading dimensions, and transferred to the model by the second rule. This scheme is convenient whether one is making a full set of drawings, or only occasional sketches and using the eye.

A PACIFIC LOCOMOTIVE

CONSTRUCTED BY MR. L. LAWRENCE

("L. B. S. C.")

While it is not our policy to feature the work of our foreign contemporaries. We cannot resist the desire to insert an illustration and few particulars of "L. B. S. C.'s" latest Model Locomotive. He has earned an international reputation for the splendid workmanship he always puts into his models; and we believe our readers are always interested in such men and the work they do. He is a locomotive engineer by profession and knows the "in'ards and out'ards" of the iron horse so thoroughly that it would "go agin his grain" to turn out a piece of bum work.

We have heard of firms who have become so commercialized that they are content to trade on a bygone proposition; but murder will out, and they will find that the lemon they have stuck some innocent model fan with will one day come back to them as a boomerang.

We feel quite sure that this will never happen to "L. B. S. C." or to several good conscientious workmen in the U. S. who we know are doing their level best to give a square deal and turn out work that will stand the severest test and scrutiny.

There seems to be one thing that purchasers of finished models overlook, i.e. a good job well done should be well paid for. The maker of a fine model is just as much entitled to a good price for his finished product as a sculptor, artist or jeweller for their handiwork. The construction of a fine working locomotive means good material, skillful workmanship and many weeks of arduous, painstaking work.

DETAILS OF "PACIFIC" LOCOMOTIVE; ENGLISH SOUTHERN RAILWAY OUTLINES.

Loading gauge, American; rail gauge 2½ in.

Length over buffers, 3 ft. 8½ in.

Boiler—4⅛ in. diam., 1 ft. 10 in. long, including smokebox.

Tubes—Twenty-two ⅜ in. diam., two 9/16 in. flues for superheater; all 13 in. long. Two-element Robinson superheater.

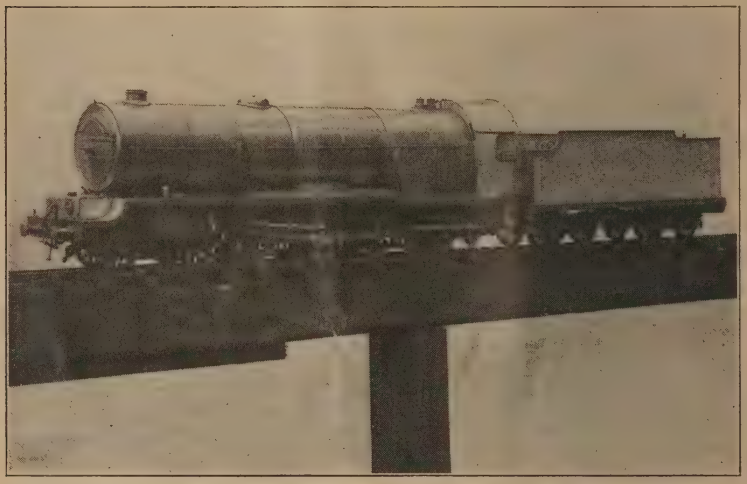
Firebox—4 in. x 4¼ in.; grate area 17 sq. in.; working pressure, 75 lb. (can be increased to 100 if desired). Fuel, hard coal.

Cylinders (four, high pressure), ¾ in. bore, 1⅛ in. stroke. Inside cylinders drive leading coupled wheels.

Bogie, pony and tender wheels, 1¾ in. diam. Drivers, 3 5/16 in. diam.

Valve gear, full Walschaert's, two sets. Inside valves worked by rockers; 1/64 in. lead, 1/16 in. lap; cut off at 75% in full gear; will link up to 20% when running and maintain even beats with three passengers up.

Working details—Boiler fed by two eccentric-driven pumps, 5/16 in. bore ⅜ in. stroke, and a working injector, the delivery cone of which has a bore of 1/40 in. and works down to 35 lb. pres-



sure. Three snifting valves; whistle, with spring lever valve; working leaf springs on tender trucks; throttle in dome; two ¼ in. safety valves, ring blower, and all other details as in English practice, including all boiler head fittings.

The engine maintains its working pressure with ease, when both pumps are putting cold water into the boiler. With 75 lb. pressure it has actually hauled one load of five adult passengers, and on a second trip, another load of three adults and six children. Its maximum hauling capacity has never been fully tested, but on sanded rails with 100 lb. steam would probably exceed 1,000 lbs.

REVIEW NOTICE

Galvanizing a theoretical and practical treatise on the subject for the use of works managers, students and others by Heinz Bablik translated by C. T. C. Salter, iv 168 pages, 84 illus., 9 in. x 6 in., cloth, $5.00.

During the many years devoted to the management of the large galvanizing works the author has made many scientific experiments in this subject and he believes the results of his researches will prove of some value to others interested in this industry. Contents of Chapters: I. Rust and its Prevention. II. The Structure of Galvanized Coating; Hot-Galvanized Coatings, Electro-galvanized coatings, Sheradized Coatings, Schoop Coatings. III. Pickling. IV. The Flux. V. Hot-Galvanizing; The Galvanizing Tank, The Galvanizing Process, The Austrian Galvanizing Process, Galvanizing Cast Iron. VI. Raw Materials and Waste Products of Hot-Galvanizing. VII. The Theoretical Principles of Electro-Galvanizing. VIII. Electro-Galvanizing Plant. IX. Sheradizing. X. The Schoop Process. XI. Testing and Judging Galvanized Coatings; Mechanical Properties, Method of Galvanizing, Thickness of Coating, Action of Corrosives. Index.

Mr. Volney F. Crouch, of 530 West Oak Street, Roseburg, Ore., writes us that he has found two very enthusiastic modelmakers and he has written us to know if we cannot put him in touch with any other gentlemen interested who might be residents of his state. He would very much like to form a modelmakers club providing he can get enough members to support the movement. Please write to him.

Mr. Frank Birch, of Highland Park, Mich., after six months of very close work and long hours, took a Sunday off for a "toot." He made a call upon Mr. G. M. Clarke, of Ypsilanti, Mich., and had a delightful visit with that genial and enthusiastic model maker. They had a grand time talking models. We are glad to do all we can to bring our readers in contact with each other. That is the best and surest way to encourage the development of really worth-while work and enthusiasm in their pet hobby.

Mr. Ernest Maunder, of St. John's, Newfoundland, has sent us photos of three of his model ships representing some of the old Newfoundland Sealing Fleet. We hope to be able to give a description and illustrations of one or more of these models later on.

Mr. E. S. Spargo, 41 Randall Ave., Freeport, Long Island, N. Y., has built quite a number of models. He is now interested in the construction of a locomotive power of which will be electric motors. He would like to hear from any of our readers who could advise him as to where he could get some small electric motors suitable for this work.

Mr. John Martynek, 16 Holland Street, Binghampton, N. Y., is very much interested in models. He would like to get in touch with any of our readers in his vicinity who would be interested in an occasional get-together meeting to talk models.

When writing for information please enclose stamped and addressed envelope for reply.

CORRESPONDENCE

The Modelmaker,
120 Liberty St.,
New York, N. Y.

Dear Sirs:—

Inclosed find $1.00 to pay for my subscription for the Modelmaker for the coming year, you have a great little magazine and keep the good work up.

In reading your editorials in the December issue you say that there is some criticism as to the amount of space that you devote to model locomotives, I should think that could be blamed directly to the model makers as it is your obligation to publish descriptive matter of all interesting and unique models that come to your attention. I admit that there is something fascinating in model locomotives and expect to start construction on one soon, but there is such a wonderful field for models, for instance, stationary engines built to scale the same as locomotives and there are any number of types to choose from, corliss engines either simple or compound and by the time that the model maker builds one and finishes a full releasing gear with standard governor control, he will have a beautiful piece of work and one that will well pay him for his labor, then there is the automatic cut-off engine that could either be made simple or compound and when made to scale would make a fine model and the model maker could also make a small D. C. generator and direct connect to the engine, there is also the hoisting engine that would make a fine model to say nothing of pumps of various kinds also boilers. The portable engine, traction engine, also road rollers would make fine models, and to go into the electrical game there are motors, generators, miniature switchboards and a host of other things, a model of the house that you might be living in completely furnished would make a novel exhibit. I am merely offering these suggestions to try to open a new train of thought for some model maker that may want to get out of the rut.

The average model maker I have found does not take the same painstaking labor to construct a model stationary engine that he would if it were a locomotive and almost always while they run very well do not look like a large engine and the same holds true to boilers as most model boilers are not designed to promote rapid circulation which is essential to all boilers regardless of size, I would like to see some of the model makers make some of the above models to scale as I know that they will be delighted with results.

You may think that I am unduly critical in regards to the stationary engine models but will say in reply that I have been a stationary engineer for seventeen years and in that time have made a number of scale models of both engines and boilers and the results were always highly gratifying.

I resolved to write this letter when I read the editorial I spoke of in the beginning of this epistle and hope that you will take it in the spirit in which it is written, so hoping that the Modelmaker will have a highly prosperous year, I remain,

Sincerely yours,
W. W. MATHER,
Warren, Ohio.

Mr. J. W. Neptune, 130 Paul Court, Akron, Ohio, writes us that the notice we inserted in the Modelmaker several issues ago has brought him a number of enthusiastic visitors. They are planning to have another meeting shortly with the object of forming a Modelmakers club. If any of our readers in this section are interested in this movement and have not already communicated with Mr. Neptune we would suggest they do so at once as it seems from Mr. Neptune's letter that it will be a real live organization and worth belonging to.

Mr. F. C. Icken, of Morsemere, N. J., has in hand the construction of an up-to-date electric locomotive for "O" gauge. He would be glad to exchange views with any of our readers interested in the construction of a similar model.

In writing to the Modelmaker for information please enclose a stamped and addressed envelope. While we are always willing to answer our readers letters to the best of our ability our correspondence is getting so large as to make the item of postage very considerable.

J. H. B. we would recommend Practical Lessons in Metal Turning and Screw Cutting, by Marshall, price $1.25. This is considered one of the most practical works on this subject and will fully cover all the questions you ask. The many illustrations are very clear and explicit, copies of this book can be obtained from our Book Department.

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One 6 in. Universal Lathe Chuck in good condition, priced right. Neptune, 130 Paul Court, Akron, Ohio.

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Radio and Electrical Supplies, Robert E. Bedford, Johnstown, New York.

Blue Prints of Ships for Modelmakers, send for circular. G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

Patterns—Wood and Metal, Models and Small Castings. Special attention to modelmakers wants. J. H. Koch, 103 Summit Ave., Linwood, Pa.

Morgan twenty-foot glider parts. Precision machine work for models a specialty. F. W. Icken, Morsemere, N. J.

Bench Drill—Build your own. Complete working drawings, 24 x 36 in., postpaid $1.00. Free list of Modelmakers Supplies. P. W. Cornelius, 2457 E. Washington St., Indianapolis, Ind.

Constructional Blueprints—24" Model Racing Yacht, 1 sheet, $2.25. Perry's Flagship, the famous brig Niagara, which won the battle of Lake Erie. Length of hull, 25¼". 3 large sheets, $5.00. These blueprints give all details and measurements to build and rig above models. A. R. Ferris, 284 East 151st St., Cleveland, Ohio.

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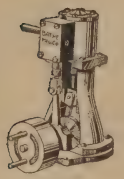

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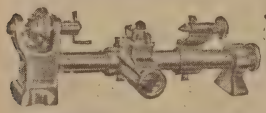

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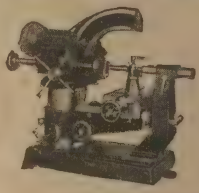

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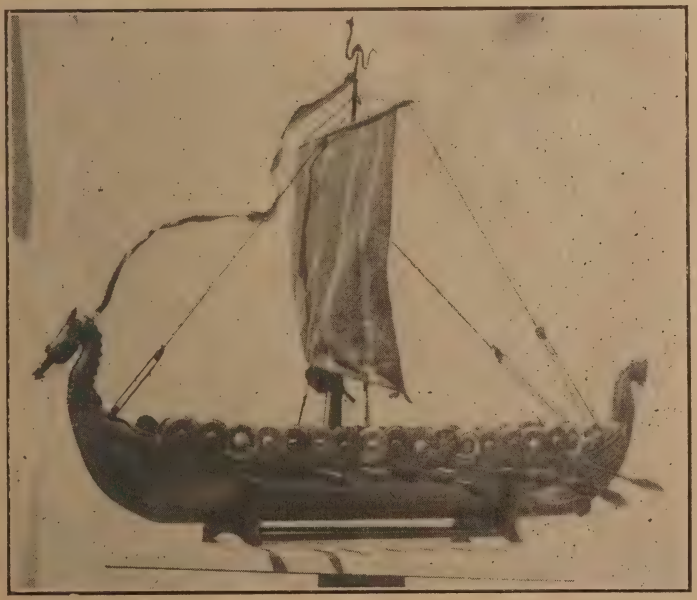

MODEL OF A VIKING SHIP
MADE BY MR. H. O. HAVEMEYER, JR.

THE MODELMAKER

Published by SPON & CHAMBERLAIN

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OUR FOREWORD

With the approach of Spring and warmer weather our Model Yachtsmen will be tuning up their last year's boats and completing new ones for the opening races of the coming season.

We shall be glad to receive advance notices of forthcoming events from the Secretaries of the various Model Yacht Clubs in the U. S. and Canada. We hope the time is not far distant when there will be Annual Model Yacht Races at which members of the various Clubs will enter their boats. A National Model Boat Regatta would increase the interest very considerably in this delightful recreation.

We note from letters received a very considerable interest is being taken in the construction of models of old-time sailing ships. The models of Donald McKay's Clippers we described in the December, 1925, issue of The Modelmaker, have all been sold, realizing very good prices.

Model Sail Boat enthusiasts are still in the majority, but an increasing number are devoting their energies to model power boat design and construction.

This is a much larger field than the sail boat, as there are such a great variety of hull designs to model from. While the propelling power could be steam, electric, gas engine or clockwork, the selection of the most suitable power plant would largely depend upon the type and size of hull, and the work it was intended to perform.

We shall be pleased to receive from any of our readers descriptions and illustrations of boats they have built for insertion in future issues of this Magazine.

The Model Railway News, principal contents for February issue: Mr. E. G. Attenborough's 2½" Gauge Outdoor Railway. A very complete installation. Modelling the New L. M. S. R. "Baltic" Tanks. Modelling Narrow Gauge Railways. Model Railway Signalling. Building a 1" Scale "Pacific" Under Difficulties. Walschaert's Gear for Number 1 Gauge. A Country House Model Railway. Two Dummy Locomotive Fittings. Sub-structures for Permanent Indoor Railways. "O" Gauge Locomotives. A Novel Locomotive Competition. Our Mail Bag. Club Notices, etc.

A MODEL VIKING SHIP

By MR. H. O. HAVEMEYER, JR.

This model was made as accurately as possible to records published by the British Society of Nautical Research of the famous Viking ship, unearthed several years ago.

The keel, stem and stern pieces are cut from clear oak, lined up and screwed together. The planking, of thin pine strips, is nailed on clinker fashion with the top plank lapping the next lower one. The floor beams and planks are next inserted and carefully laid down with brads. The rowers' seats, or thwarts, twenty-four in number, are next put in, arranged so as to leave an aisle the whole length of the vessel. The forward and stern decks are then fastened, being raised about 3/8" in the bow and about 5/8" in the stern.

The holes for the oars are marked, re-enforcing pieces glued in behind the bulwarks, and the holes carefully drilled. The figurehead and tail end are carved from mahogany, and fastened to the hull with dowel pins and glue. The small serpent designs are made of wood and pinned fore and aft, as shown.

The heal of the mast is fitted into a block of wood, fastened to the keel and the mast and spar erected.

The shields, 34 in number, are turned from hard wood, their edges beveled, backs cored, and bosses left on the fronts. On each shield is painted a different Norse insignia in colors.

The blocks are made of mahogany; the rudder is of carved mahogany with a tiller handle, also of carved mahogany. The rudder is affixed to the ship with a brass rod.

The hull is painted a medium blue, with alternating planks a light green. The serpent designs are yellow with black spots. The figurehead is done in various tones of bronze and copper. The horse's mouth is red, with darts ornamented like fire with yellow and black. The tail is bronzed similar to stem piece. The entire interior of the ship with all the fittings, spars, blocks and oars are stained with penetrating weathered oak stain.

The sail is a piece of muslin edged with cord and painted in stripes of yellow and red, with narrow blue bands. The streamer

is a length of tri-shade of green silk ribbon wired to hold its form.

Mast top ornament is of brass soldered to a length of rod and painted dull silver with black spots.

Rigging is black cord belayed in proper fashion. The entire finish of boat is dull, no varnish being used at all, and when swung from the ceiling on a wire, renders a very pleasing piece of interior decoration, its principal charm being in accuracy of form.

Principal Measurements

Length overall, 32".

Depth of Hull, bow 5".

Depth of Hull, midship 3¾".

Depth of Hull, stern 4½".

Beam, 5".

Height of Mast above bulwarks, 12".

Length of yard arm, 10".

Diameter of Shields, 1¼".

Mr. Dobler was in to see us the other day and he informed us he was making good progress with his P. R. R. K. 4s ½" scale Locomotive. He spoke very enthusiastically of Mr. Coventry's set of drawings. The working parts were made at different times following the drawings most carefully, and when he assembled the finished parts they fitted together perfectly. He has the chassis and working parts all finished and assembled. This goes to show it is worth while to make a full and complete set of working drawings before the actual construction is commenced.

We know of several cases where much time was lost and considerable extra work entailed because the Modelmaker did not make scale drawings of the working parts. It takes time and calculation to lay out detailed drawings, but it does pay in the long run to do this work. If a Modelmaker is not competent to do this work himself, it would be much better for him to purchase a complete set of drawings or enlist the help of some model fan who could do this work for him. In the latter case they could either work together on the construction of one model or each could build his own model, comparing notes as the work on their models progressed.

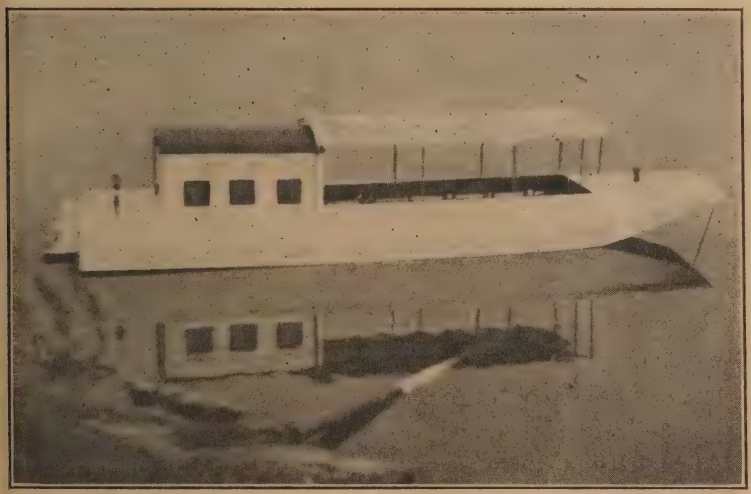
We have just received from Mr. John A. Howland, of Jackson, Mich., a very full and interesting account of the construction of his locomotive, modelled after the famous N.Y. C.R. "Number 999," built partly of wood and partly of metal. He also sent us some photographs. We shall include this article in the April issue of The Modelmaker.

MODEL OF "SANDPIPER"

By MR. HARRY A. CAMPBELL

I have sent you some snap-shots of Sandpiper which may interest some of the readers of The Modelmaker.

Sandpiper was built from designs by Mr. William Atkin that were published in Motorboating. I built my model on a scale of 2″ to 1′. This gave me a 60″ model of a 30′ boat. There was nothing very difficult in building her as all lines are straight. However, I found that the only way to start a thing of this kind is to make full size lines and plans before attempting the framing. My boat is framed with soft pine and planked with redwood. The redwood I salvaged from two old tank staves. The deck and house are oak.



For power I used a "Klaxon" horn, which came from a Chevrolet. This type of motor is especially good for boats, as it has a thrust bearing. Five dry cells drove her four miles per hour. "Sandpiper's" tunnel stern makes a small high-speed prop necessary, which is the reason for electric drive.

For caulking seams I found that a stiff mixture of glycerin and red lead or litharge is really great. It's water proof and can be easily covered with paint. Sandpiper never has leaked.

SOME LOCOMOTIVE CONSTRUCTION NOTES

By H. J. COVENTRY, Assoc. Mem. A. S. M. E.

There is probably no more discouraging experience than to find after many hours of labor spent in producing model locomotive frames, wheels, axles and side rods, that the wheels stick tight in certain parts of the revolution. The requirements for free running are: (1) Axles must be parallel; (2) wheels must be correctly quartered, that is, the crank pins must be at right angles; (3) center distances of side rod bushing's must be same as axle centers.

To attain these results it is not enough to merely work as close as possible to respective dimensions, neither is it necessary to do so. It is, however, more important that the axle centers and side rod bush centers be identical.

We will assume that frames have been rough sawn out, not forgetting to allow for the inevitable warping if cold rolled steel is used. Straighten as well as possible and then file the top true and straight. From this edge mark out all openings and drill holes. The frames should be rivetted or bolted together, using any of the holes required later for brasses, etc. Now proceed to operate on the **front** jaw of **main** pedestal and get this square both with side of frame and the straight top edge; file down close to the line. Next make a simple gauge-like sketch, Fig. 1, which is made to center distance of axles. Having front jaw of main pedestal true, proceed to front jaws of the other pedestals, filing till the gauge just goes over. Keep the gauge parallel with top edge of frame and feel with it just as you would with calipers.

After the **front** faces of all pedestals are true, file up the **back** face of **main,** using inside calipers set to dimension of jaw opening. The backs of the other jaws can be trued up the same way, using the same caliper setting, or the axle distance guage may be used working off the **main** back face. Before taking the frames apart it is better to drill all holes, in fact finish completely.

Now make the driver bearings, but do **not** bore them, leave solid and fit snugly to pedestal jaws. It is now necessary to make a simple jig for side rod centers. Take a piece of cold rolled steel, almost any flat section will do, say ¾" x ¼", and on its length

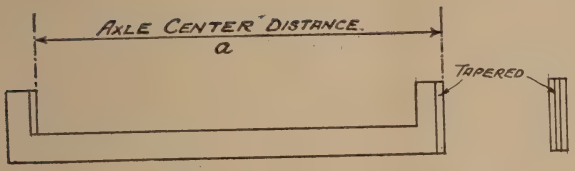


FIG. 1

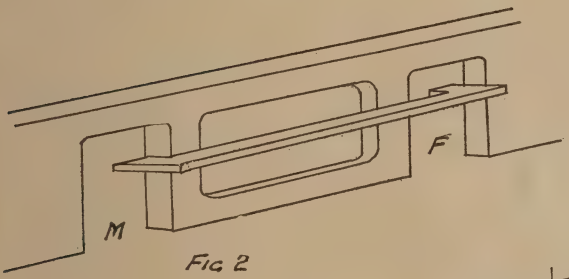


FIG 2

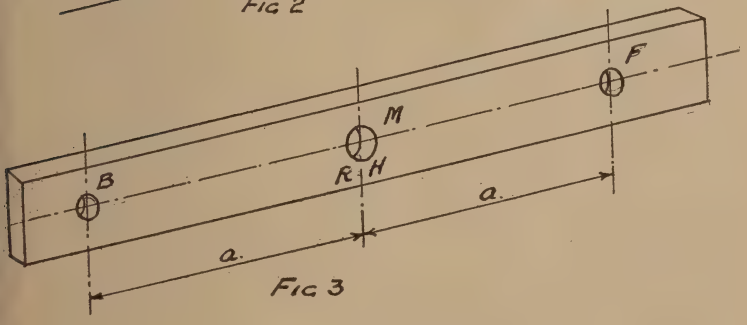


FIG 3

scribe a line, and from this set off the centers of the side rod bushes, starting from the main driver, and with the dividers set to the correct dimension step off the front, and back, or according to the number of coupled wheels. You can, if you prefer, lay the piece of c. r. s. on your finished frame and scribe lines, using the front faces of pedestals as a guide for the scriber. Center punch the points and drill same diameter as the unbushed holes in side rods. Mark the jig so that you will know which is the front crank pin center, also mark whether right hand, or left. See Fig. 3.

Take another piece of cold rolled steel, and using the jig clamped to it, spot sink with same drills as at BM and F, Fig. 3. Take off the jig and drill holes same diameter as bearings. You will now have two jigs satisfying condition No. 3, axle centers will be same as side rod centers, and whether actually a few thousandths more, or less, than the required dimensions will not affect the result in the least.

Driving boxes can now be drilled. Clamp the two frames together. Simplest way is to lay them bottom edge up on a surface plate and square off through pedestals. Mark the center of main bearing, and right here it is as well to check the distance to center of cylinder seat. If not in agreement with drawing, shift the center line on bearing, or compensate the error in cylinder flange when this is being put in frames. Center punch the main bearing and drill, and ream, right through the two bearings, taking care that the frames are well and truly supported on the drilling table.

Now take the jig, place it on the frame, and locate with a well-fitting pin pushed through into bearing. Be careful that you have the jig correctly located with hole marked F coming over front bearing and edge of jig parallel with top edges of boxes. Clamp jig tight and run drill through all other bearings.

The side rods are made in a similar manner by laying out from main, drilling same, put jig on and locate with pin, clamp and drill the eye ends. In the case of locomotives with more than two coupled axles, fit the side rod knuckles before drilling eyes.

One more requisite is necessary to smooth running: that is the angle which the crank pins bear to each other from side to side must be the same throughout the whole act of wheels. It is not absolutely necessary that the cranks be at 90 degrees; they could just as well be 89 or 91, but it is easier for practical reasons to make the cranks all at 90 degrees than some other angle.

The wheels should all be of the same diameter. If an error has

been made in any one or any one pair, turn the others down to same size. Having the axles and wheels already, and one wheel pressed on its axle with crank pins already in, mount on a V block and clamp by the axle, adjust so that the crank pin is horizontal. This is easily done by setting the surface gauge to axle center and turning the wheel round till crank pin center coincides. A small collar should be made to slip over the crank pin of other wheel. The outside diameter of the collar should be the same as axle diameter in wheel seat. Push the wheel onto the axle as far as it will go, by hand, and as near as possible to 90 degrees slip the collar over the pin and with the square or surface plate adjust the wheel so that the blade of square just touches the collar and at the same time is in line with circumference of axle.

Another method is to set the wheel and axle on the V block at 45 degrees, using the head of a "B and S," or "Starrett," universal square in conjunction with the collar on crank pin.

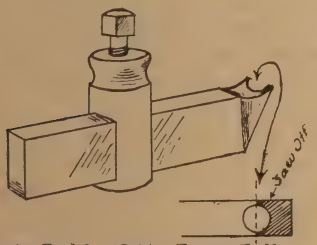
In setting the wheels be careful you make them with same crank lead. If the above procedure be adopted no fear need be had that the wheels will stick, or bind, when the engine is erected.

CORRESPONDENCE

The Modelmaker:

Dear Sir:

In a previous issue of your paper a reader asked where he could get small brass balls. The following kink for making them may interest him.



Forming Tool for Making Bronze Balls

Secure a suitable piece of tool steel that will fit in the tool post of the lathe. Select a twist drill of the diameter of the ball desired. Drill a hole through the steel on the end and saw the steel directly through the center of the hole leaving a half circle. The tool is undercut and sharpened, and then hardened. Center a piece of brass rod the size required in the lathe and with this tool you can make as many balls as you require. (See illustration.)

Edgar L. Brown,
Greensboro, N. C.

Mr. W. H. Buckley, of Guysboro, N. S., has just sent us a photograph of a two-cylinder horizontal stationary engine he built from scrap material, and it is certainly a clever little model. He is quite a genius in utilizing odd scraps that other members would throw away.

PROPORTIONING THE PARTS FOR A MODEL STEAM ENGINE

The following is a table of dimensions of a standard type of horizontal single-cylinder steam engine, working up to 100 lbs. per sq. in. in steam pressure.

The proportions of parts are based upon the cylinder diameter, which is assumed to be the unit.

To find the correct size of any corresponding parts for a model of a given size, it is only necessary to multiply the cylinder diameter by the decimal fractions given.

This data should prove of interest to any reader wishing to build a model steam engine of this type.

PROPORTION OF STEAM ENGINE PARTS

(H. Muncaster)

Piston dia., 12 ins. = 1.000.
Stroke, 18 ins. = 1.500.
Piston Rod dia., 2 ins. = .166.
Cross Head dia., 2¼ ins. x 3 ins. = .187 x .25.
Crank Pin, 2¾ ins. x 3½ ins. = .23 x .3.
Connecting Rod dia. ends, 2¼ ins. = .187.
Connecting Rod dia. middle, 2¾ ins. = .23.
Connecting Rod length, 4 ft. = 2.66 x stroke.
Crank Shaft dia., 5 ins. = .416.
Crank bearings dia., 4½ ins. = .375.
Crank length, 6¾ ins. = .506.
Crank W. I., 3½ ins. wide, 9 ins. boss = .3 x .75.
Valve Spindle dia., 1¼ ins. = .104.
Eccentric Rod dia., taper 1¼ ins. to 1½ ins. = .104 to .125.
Steam Ports, 5 ins. x ⅞ ins. = .416 x .073.
Valve travel, 2½ ins. = .208.
Valve lap, ½ in. = .041.
Valve cavity, 3½ ins. = .3.
Valve lead, ⅛ in. = .01.
Steam inlet dia., 2¾ ins. = .23.
Exhaust outlet dia., 3½ ins. = .3.
Flywheel dia., 5 ft. = 5.0.
Flywheel rim, 6 ins. square in section = .5.

THE BOYS' STEAM LOCOMOTIVE CLUB

Forest Hills, L. I.

Dear Sirs:

Please renew my subscription to the "Modelmaker" for the year 1926 for enclosed $1.00.

The club is very much interested in the Modelmaker, especially the articles on model locomotives, and we think that both you and your contributors deserve great praise.

Three weeks ago some members of the club, including myself, visited Morris Park Yards for our fifth trip there. They are the property of the L. I. R. R.

The men down there were very kind to us, just as they always are, letting a man take us all through the yards and shops. We started out by going over to the coaling stage where the coal is brought up on an endless belt, then we went to the sand drying house where the sand is put on pans around furnaces and when it is dried it is put into the sand bunkers. From there we went to the ash pits and graveyard where all the old locos are stored before breaking up. Near by were two 4-6-0's, one of which is the L. I.'s fastest loco. making the run from Patchogue to Jamaica in 40 minutes, the distance being 50 miles. From there we crossed the yards to the turntable and went all through the roundhouse outside of which a locomotive was being cleaned of dirt and grease by means of a long nozzle through which hot water was shot. We then went through the main shops from beginning to end. Starting at a locomotive which was stripped down to the frame, then working up to one that was nearly ready for the road. This shop is the main repair shop of the Long Island Railroad. In there they make all sizes of bolts, repair tenders, boilers, and all general repair work. We saw a tender cut open and got a fine idea of how it is braced in the water tank to resist the water pressure. We also saw a locomotive with the smoke-box door off and men working in the smoke-box. From there we went to the flue shop where they were knocking scale from the flues. We also saw them tapering the ends of the pipes while red hot and in other words getting the raw material ready for the locomotive and making the old ones fit once more for service. This completed our finest trip and we were much the wiser when we reached home than when we left.

Thanking you in advance, I remain,

Yours truly,

BILL NEISEL,

56 Tennis Place,
Forest Hills, L. I. N. Y.

The Gerold Co. report they have had a very busy three months, during which time they have filled many orders for the Wade Lathe, and have also supplied many complete sets of fittings and odd parts. Our readers are beginning to appreciate the fact that this compact little tool is the ideal lathe for model work.

Mr. Frank Birch of Detroit is building a Pacific Locomotive and expects to have it completed shortly. He has patterns for locomotive drive wheels from "O" to ¾ in. gauge.

Model Engineer, principal contents of Volume 42: Design for an Outboard Marine Petrol Motor. Model Railway and Locomotive Matters. Model Marine Notes. Some Attachments for a Lathe. Modern Machine and Hand Tools. A Model Beam Engine. New 4—8—0 Type Tank Locomotive. 13 Ft. Windmills. Model Engine Building. Punching and Cutting Tools. A Model Power Boat Steam Plant. 10-Rater Model Yacht. 2½" Gauge Steam Railway. Construction of Rolling Stock for "O" Gauge Railway. Overtype Steam Engine. A French Model Locomotive. A New Design for an Electrically-driven Clock. Model Power Boat Rob Roy. Model of Parson's Steam Turbine. A Small Milling Machine Attachment. Three-cylinder Simple 4—6—0. Canadian Railway Bridges. Models at South Kensington Museum. Description of Stewart Turner's Factory. M. E. Lathe Competition. A Six-foot Windmill. A Five-foot Model Yacht. A 4—6—0 Locomotive for India. Three-cylinder Simple Steam Engine for Model Power Boat. Clockwork-driven Locomotive. Model of a Ford Truck. Model Sail and Power Boat Exhibition. Precision Work. Description of the Eskdale Railway. Universal Cutter Frame. Petrol Hydroplane. A Built Up Four-jaw Chuck. Further Details of a 13 Ft. Windmill. A Compound Slide Rest. An Electrically-driven Model of the S. S. Australian. Drummond Brothers Works. Design for a Built Up Model Horizontal Steam Engine. Model L. & S. W. R. Electric Coach. The Construction of a Small Fishpond and Fountain. A Tele-rainguage at Work. Model Steam Engines and Boilers. Electrical News and Notes. Practical Letters News of the Trade. Society and Club Doings. Title and Index. 524 pages, price $3.00 in numbers.

CLUB NOTES

The New York Society of Model Engineers was organized on the evening of March 9th at 15 Moore Street, New York. Mr. A. A. Singer was elected Secretary. It was arranged to hold regular meetings the second Tuesday of each month at 8 P. M. at the above address. The next meeting will be held on April 13th. There were quite a number of enthusiastic Modelmakers present. Mr. T. Bray showed some models he had made of stationery engines and Mr. F. D. Grimke exhibited two "O" Gauge Locomotives. The models were much admired for their excellent workmanship. Any reader wishing to become a member should write to Mr. A. A. Singer, Secretary, 15 Moore Street, New York City. There are a great many Modelmakers residing within easy distance of New York and there is no reason why this club should not grow into a big organization.

Akron, Ohio. We have just received a communication to the effect that a group of Modelmakers in this city have formed a Model Engineers Club. They have already had three meetings. We hope that all our readers interested in this work living within a reasonable distance of this city will either write or call upon Mr. R. W. Jacobs, the Secretary, 115 North 16th Street, Kenmore, Ohio, for full particulars of membership.

Model Railway News. Contents for March, 1926. Notes of the Month. What We Want. In Praise of Two-inch Gauge. A Super Detail Gauge "O" Model. Locomotives of the "OO" Gauge West Midland Railway. Sketches in Elevation and Plan Showing the Extension to Mr. G. S. Rees' Garden Railway. Model Three-ton Open L. N. E. R. Fish Truck. A Suggestion for a Pressed Metal Keyed Chair. A Busy Station. H. A. G.'s Layout for his "O" Gauge Model Electric Railway. Mr. S. M. Hunter's Model 4—4—0 Midland Railway Locomotive. Our Mailbag. Questions and Answers. With the Clubs. For Sale and Exchange.

Mr. Roy Ashley of the American Model Locomotive Co., San Francisco, Calif., is building up quite a nice connection. There seems to be quite a number of model fans in this sunny state. Some of them are trying to get sufficient men together to form a good live Model Engineers Club. We shall be very pleased to help in any way we can by inserting notices in the Modelmaker.

Mr. James H. Koch, 103 Summit Ave., Linwood, Pa., writes us that there are quite a number of young Modelmakers in his vicinity and they often get together to help one another. All of our readers who are living within a reasonable distance of Mr. Koch should get in touch with this gentleman if they have not already met him. He is a watchmaker by profession, but a Modelmaker by choice. Having a well equipped workshop in his home he is in a position to help any Modelmaker who lacks the facilities for doing difficult machine work. Here is a good opportunity for the formation of a Modelmakers Society.

At the annual meeting and dinner of the Montclair Model Engineers Club, Mr. E. T. Judd was elected president and Mr. J. B. Rettallack of 65 Dunnell Road, Maplewood, N. J., was elected secretary and treasurer. Those present had a very enjoyable evening and are planning considerable activities for the coming season.

The Gerold Company advise us that very shortly they will have ready for the market another addition to the celebrated WADE line of tools. The latest addition is a small power driven bench drill. Combined with the WADE lathe and a small bench grinder this offers the modelmaker an almost complete home shop for handling all sorts of jobs.

Mr. A. A. Singer had another enthusiastic meeting of Modelmakers at 15 Moore Street, New York, on the evening of March 9. They are making good progress towards the formation of a real live organization in the interests of Modelmaking. We wish them every success.

The Model Engineer, principal contents for January 7, 14, 21, 28: Model Engineers and Their Work. Mr. W. G. Corner's Four-cylinder Triple Expansion Marine Engine. The Bed of Small Lathes and Their Fittings. Model Bell-crank Engine. L. B. S. C.'s Column of Live Steam. Peculiarities of Pumps.

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Blue Prints of Ships for Modelmakers, send for circular. G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

Gears and Model Supplies of every description, catalogue 5 cents. Experimental Supply House, Box 10, Station Y, New York City.

Morgan twenty-foot glider parts. Precision machine work for models a specialty. F. W. Icken, Morsemere, N. J.

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I make patterns, small castings and working models. Modelmaking is my trade. James Koch, 103 Summit Ave., Linwood, Pa.

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Models, Railways and Locomotives, back nos. and Vols. in good condition. Box 10, Modelmaker.

Everyday Mechanics, Nos. 1 2 and 6 of Vol. 1, Nos. 1 2 and 3 of Vol. 2. Box 2, Modelmaker.

American Institute of Elec. Engrs. Volumes 1 to 8. Box 4, Modelmaker.

Electric Motor Stampings. Small sizes suitable for electric motors for model locomotives. Modelmaker, Box 10, 120 Liberty Street, New York.

THE NAMES AND ADDRESSES of the Secretaries of U. S. and Canadian Model Engineer Clubs and Model Yacht Clubs, address Modelmaker, 120 Liberty Street, New York.

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EXCHANGE

Railway Centenary; Theory of Models & Tractive Power Chart's both in Cylinder & Wheel Diameters, etc. For back Nos. of Model Railway News, with November and December included, 1925, Charles LeRoy, Dovetail, Montana.

FOR SALE

Rough Sketching; The Handy Sketching Book, consisting of sectional ruled paper, plain eight squares to the inch, with some useful tables, size 5 x 8, bound in limp card to fit the pocket, price $.35, Spon, 120 Liberty Street, New York.

A B C of The Steam Engine, describing a high speed single cylinder, double acting, horizontal steam engine and automatic governor, with large drawings, price 35c. Spon, 120 Liberty Street, New York.

Railway Centenary — 1825-1925, being an exceedingly interested historical account of the British Locomotive, cars, and signalling apparatus during a hundred years of development, with many illustrations and some larger colored plates, 124 pages, 11 x 8½" paper binding, $1.60 postpaid. Spon, 120 Liberty Street, New York.

Practical Manuals, fully illustrated, stiff covers, 75 cents each:

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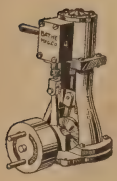

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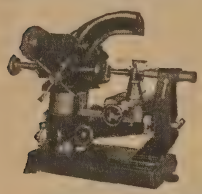

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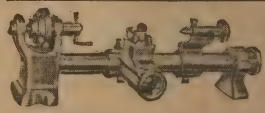

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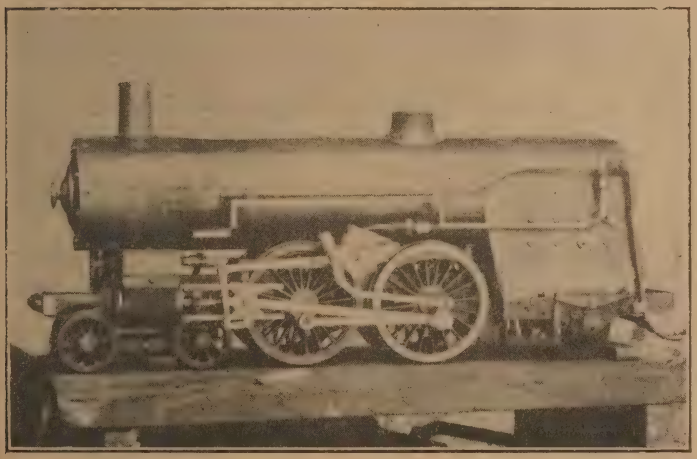

MR. W. G. LANDON'S
½" Scale Locomotive (see p. 59)

THE MODELMAKER

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OUR FOREWORD

The many letters we have received in the past twelve months from readers wishing to be put in touch with other Modelmakers in their vicinity is a clear indication of the growing interest being taken in this delightful pastime.

Here is where the Club feature looms up strong, the banding together of little groups of men with similar interests for their mutual benefit, with a meeting place where members can exhibit and discuss their models and where the beginner can get help and practical suggestions from the older and more experienced Modelmaker. A community of interests that creates enthusiasm and encouragement.

There are a number of well established organizations, viz., The Canadian Model Engineering Club, of Toronto; The Chicago Society of Model Engineers; The Montclair Model Engineers Club; The Boston Society of Model Engineers; The Brooklyn Model Yacht Club; The Detroit Model Yacht Club; The Toledo Model Yacht Club; The Central Park Model Yacht Club, and The St. John's Model Boat Club, N. B., Canada.

Last Fall a Model Yacht Club was formed in Providence, R. I., and we understand there is a similar organization in Washington, D. C.

Several new clubs have recently been organized.

Mr. R. W. Jacobs and some friends have formed the Akron Association of Model Engineers. The members meeting at each others homes. They are mainly interested in steam and electric locomotives.

Mr. A. A. Singer and a number of enthusiasts have organized the New York Society of Model Engineers. Their regular meeting night is the second Tuesday in each month.

Both of these new clubs have a number of likely prospects from whom they expect to get additional members.

Mr. J. H. Koch of Linwood, Pa., has become acquainted with a number of young men interested in this work and they hope to be able shortly to organize into a real active club.

Mr. Bill Neisel is sponsor for The Boys Steam Locomotive Club of Forest Hills, Long Island, N. Y.

The Elverson Speed Boat Club of Jersey City, N. J., hopes to be quite active this summer.

Mr. Volney F. Crouch of Roseburg, Ore., has found several enthusiastic Modelmakers and

they hope to get enough new men interested to form a Club.

There are also some small groups of men in different parts of the country who are meeting at each others homes.

Besides the Clubs we have specified we understand there are others whose Secretaries have not yet favored us with their names and some particulars of their organization.

We shall be glad to hear from the Secretaries of any of these Clubs and to help them in any way we can to increase their membership, and extend their influence in their chosen field.

While it is true that there are numbers of Modelmakers doing their work unaided, and doing it well, there are many men who would gain much by being a member of an active organization that helps its members to persevere and to aim for the highest perfection in their work.

Every reader of the Modelmaker can help in the development of American Modelmaking by joining one of the existing organizations or by getting in touch with one or more men interested in this pastime and having an occasional meeting in the home. An experienced Modelmaker can often help and encourage a novice and by doing this he is helping the good work along.

BOOK REVIEWS

Interior Wall Decoration, by F. N. Vanderwalker. 451 pages, fully illus., 7½ in. x 5 in., limp cloth, $4.00.

This work shows Practical Working methods for plain and decorative finishes, new and standard treatments. New artistic and the novelty finishes; color stippling; glaze colors, Tiffany blending and mottling; spatter work; plaster staining; sand float; sponge-stipple; Spanish palm finish; Roman travertine; Old English; Holland; French Caen Stone; Italian plaster and other aritstic rough textures; decorative wall panels; plain painting jobs and calcimining methods; hanging wall fabrics. Tools and appliances. Spray gun decorative finishes, the use of the spray-gun. Index.

A very excellent and practical guide book written in good English and profusely illustrated.

We have just received an advance circular giving a short description of a new book entitled Ship Modelmaking by Captain E. A. McCann. It will be profusely illustrated with scale drawings. We believe this book will interest a good many of our readers and as soon as it is published we will give fuller particulars.

The Model Railway News contents for April: A Model "Garrett" Type Loco. Result of the Popular Locomotive Competition. The St. Lawrence Model "O" Gauge Electric Railway. Scenic Effects. Model Railway Signalling. Construction of an "O" Gauge Model Railway. An Australian Gauge "1" Model Electric Railway. An Outdoor "O" Gauge Overhead Electric Line. Our Mail Bag. Queries and Replies. Sale and Exchange, Etc.

SHIP MODELS

At a recent sale of Ship Models and Marine Antiques at Anderson's Gallery, in New York, a very fine antique model of a Spanish Galleon of the early sixteenth century was sold for $3,750.00. It had been found in an ancient church near Burgos, in Spain, where it had been presented as a votive offering by some early Mariner before starting on some perilous voyage. Models of this period are very rare. It measured 54 inches o.a. And was about 50 inches from truck to keel.

A Model of a British Frigate made of bone, by some of the imprisoned seamen at Dartmoore, between the years 1790 and 1820, brought $1,250.00.

A Model of the U. S. S. Frigate Constitution brought $630.

A Model of the American Whaling Bark Lagoda of New Bedford another bone model, fetched $425.00.

A Model of a Spanish Frigate of the eighteenth century was knocked down for $390.00.

We have no doubt that the above Models are fine examples of their periods, and the high prices paid for them is evidence of the growing popularity and demand for real ship models for ornamental purposes.

Mr. Frank Barchard, Jr., of The Onlooker, Foley, Alabama, is at work on an "O" Gauge Pacific Locomotive. He would be very glad to hear from any of our readers who have built one of this type of Locomotive as he is rather new at this business. Any hints or practical suggestions would be very much appreciated.

The Model Engineer, principal contents for January 14, 21 and 28 omitted from page 45 of last issue. A Milling and Drilling Spindle For 3-in. Lathe. The Krauss "Pacific" For the 15-in. Gauge Munich "Lilliput" Railway. Model Marine Notes. An Electric Horn. A Small Heating System For the Workshop. Small Sheet Metal Pressings. Bearing Surfaces of Lathe Slides. A Built Up Beam and Flywheel. Locomotive News and Notes. A Foolproof Lock For Motor Cars. Experiments on the Design of Steam Whistles. The Art of Using Hand Reamers. Construction of a Tractor Seaplane Model. Pressure Gauges For Small Boilers. A Cutting Gauge For Sheet Metal. February 4. Method of Making Small Wooden Pulleys. Working Model of 1-in. Scale Locomotive Chassis With Cylinders and Valve Chests in Half Section. 1-in. Scale 4—6—4 Tank Locomotive. Mr. H. T. Griswold's Workshop and Model Of His Old Sailing Ship. Recent Inventions. Light Engineering. "L. B. S. C." On Locomotive Boiler Construction. Queries and Replies. Practical Letters. Society and Club Doings.

Mr. F. J. Dobler, 470 Senator Street, Brooklyn, N. Y. is making a very fine job of his Coventry 2½" gauge P. R. R. K. 4s ½" scale Locomotive. He would like to silver solder the boiler and would be very glad to hear from any of our readers who are familiar with this kind of soldering.

A UNIQUE LOCOMOTIVE MODEL 4—4—0

By JOHN A. HOWLAND

It is doubtful if the construction of a model was ever undertaken with less pre-determination as to what it would be when finished, or less intention to finish anything.

The elements entering into its inception and growth being a sharp knife, a nice piece of wood and some spare time. First result a crosshead and there would, probably, have been no further growth except for a question from my wife as to "Why don't you whittle out an entire engine"? That started the performance and piece followed piece until the end. So, like "Topsy," the model "just growed."

About that time Mr. Jas. Buchanan, S. of M. P. of the N. Y. C. R. R. brought out the famous high wheeled, high speed eight wheeler "No. 999."

I saw this magnificent machine when she passed through Jackson, Mich., en route to the World's Fair, at Chicago, and a little later at that Exposition where she posed as the star attraction of the Transportation Exhibit of locomotives.

Up to that time I had never seen a locomotive that could compare with the "999" in beautiful proportion or elaborate finish, and these influences determined the type and dimensions of my model.

The pilot coupling bar was nickle plated as were also the bell, driver brake triple valve body, in fact everything usually seen in brass was nickeled as well as some of the iron and steel parts—even her frames. The planished iron jacket extended to front end of smoke arch and the short, straight, stack was jacketed with the same material, a piano finish on interior of cab, and the paint work, striping, numbering, lettering, etc., was the work of an artist. The huge drivers 87½ inches in diameter extended through the running boards and were covered with low wheel housings. The height of the engine deck and correspondingly high tender frame necessitated the use of extra large tank wheels and these were spoke centre wheels.

In every line she looked the sleek, clean-limbed, capable racer and her looks were not deceiving. I believe her record of 112.5

miles per hour still stands—for a locomotive. She was the clipper ship of the locomotive world and to those who may differ, from having seen the engine in the N. Y. C.'s "Service-Progress Special," I would say, you have only seen the clipper after being stump-masted, and relegated to the coal-carrying trade.

I only wish the model herewith described was a faithful replica, in all details of that wonderful engine. The principal dimensions and general appearance are those of its prototype though the shape of some of the superficial features was changed to correspond to Michigan Central practice, as it was at that time, and these changes I now regret as they make the model a "Man Without a Country"—representing, faithfully, neither the "999" or any Michigan Central engine.

Note of the principal changes mentioned shows the pilot slats arranged horizontally instead of vertically, a "bootleg" type stack instead of a straight jacketed one, dome and sand box casings different shape. Account of overhead clearance the radius of curvature of the "999's" cab roof was shorter than usual to bring the edge (or eaves) lower. This lowered the whole side of cab and with it the running boards which had openings for tops of drivers with wheel housings. With Michigan Central curve of roof the cab and running boards of the model are a little higher, allowing latter to clear tops of wheels. The body of tender is higher and the wheels are solid instead of spoke centred. The lettering is M. C. R. R. instead of N. Y. C. & H., and the number 527 is that of the first 4—6—0, or ten wheeled, passenger engine produced by the Michigan Central.

GENERAL SPECIFICATIONS—ENGINE

Length—Overall, 55½".
Height—From rail to top of stack, 14⅛".
Wheel Base—Engine truck, 5⅝".
" " —Driving, 8".
" " —Total of engine, 21⅜".
" " —Tender truck, 4⅜".
" " —Total of tender, 15⅛".
" " —Total engine and tender, 45¼".
Wheel Diameter—Engine truck, 2 13/16".
" " —Drivers, 7¼".
" " —Tender, 2¾".

Valve Gear—Stephenson link motion complete, of brass, and moving the engine, or reverse lever, produces the corresponding motion in the valve stems.

GENERAL DESCRIPTION

Excepting the valve gear, boiler accessories in cab, truck frames and some small things such as hand rails, oil pipes to steam chests, etc., the material used was wood. Work in wood requiring a lathe was done on a machine of the "Lathe and Scroll Saw" variety. Aside from the wheels, dome, sand-box, stack, air pump and reservoirs, the work in wood was by the jack-knife route—occasionally a little plane, as for pilot frame, running boards, etc.

Pilot, cherry wood, frame built up and mortised together with brass angle plates bolted to bottom corners. Coupling bar (or "push bar") on pilot turned and carved of cherry and coupling bar casting carved of same wood. Pilot beam, headlight and shelf, stack, bell, bell standard, sand-box, dome and running boards of cherry, as are the main and auxiliary reservoirs, boiler checks and air pump. Boiler checks and air pump are jacketed with planished iron held by white metal bands.

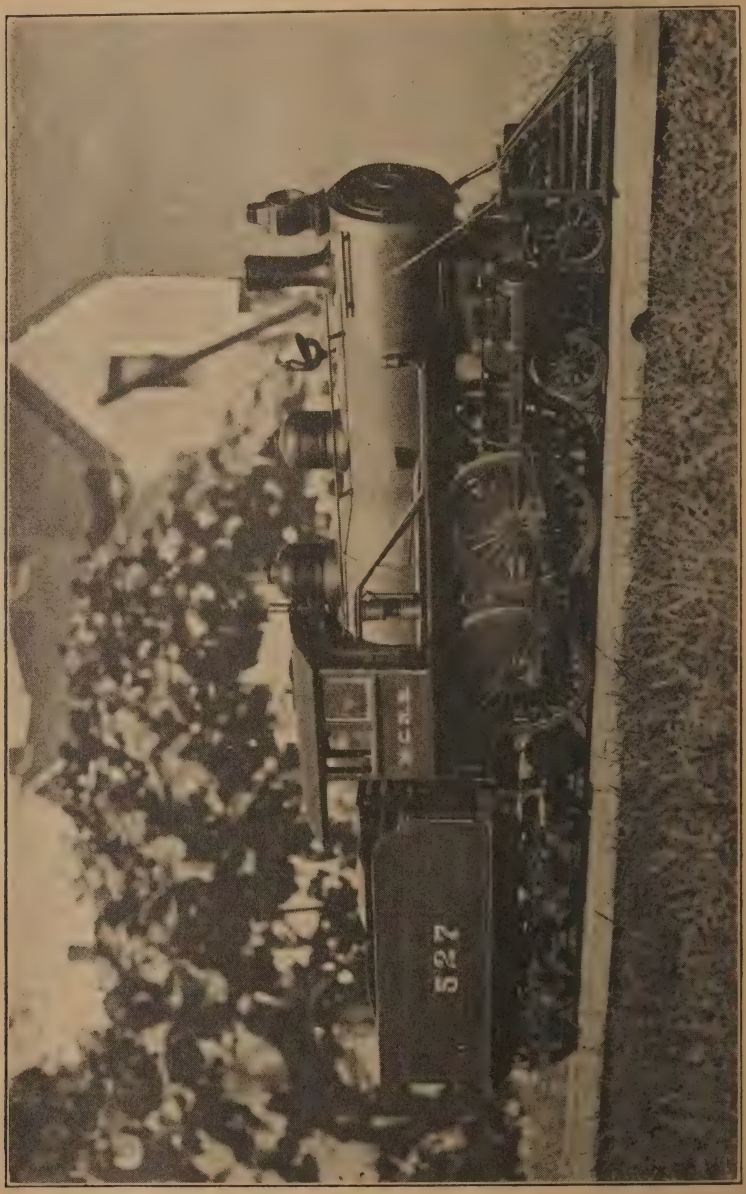
Boiler is white pine hollowed out, but leaving a half-inch shell to take fastenings, and jacketed from boiler head clear to front end of smoke arch; jacket bands held by clamps and clamp bolts underneath. Stack is hollow, bolted to smoke arch, and will "smoke" if smoke is made in fire-box, or front end. Bell standard, sand-box and dome have dowels that fit snugly into holes in the boiler, and the boiler jacket iron fits neatly around bottoms of these. The bell is of cherry, gilded, hollowed, and its "tongue" balances it about right.

All engine truck, driving and tender springs, spring hangers and equalizers are wood, and the springs show the spring bands, leaves, etc. Engine truck and tender truck centre castings are turned of cherry, and their journal boxes and pedestals are carved of it. Dry graphite provides nicely for the lubrication of wood bearings.

The cylinders, steam chests and saddle were jack-knifed from a solid pine block; top of chests corrugated to prevent slippery foothold, and same applies to sand-box steps. Motion plate and guide yokes of that same famous cherry, and smoke-box door ring turned up of whitewood to exact shape and has turned brass number plate and curved handrail.

Headlight carved out of solid block, hollowed out—chimney and all, and has block tin reflector.

The engine truck wheels and axles were turned up integral, and spokes—12 to each wheel—worked out with knife, small carving



JOHN A. HOWLAND'S LOCOMOTIVE

gouge and little files, and all smoothed, of course. Driving wheels, rock elm, turned and faced from slices sawed off the ends of wagon hub material, 20 spokes in each wheel. The rims, flanges, etc., turned to proper shape, and the crank pin bosses, counterbalances and spokes worked out in same manner as engine truck wheels.

There are no corners or roughness, every spoke being smoothly elliptical, and any wheel would serve as a pattern for a casting. Hickory driving axles turned, fitted, driven, keyed and glued in wheels (the only place, aside from window sashes, where glue was used); other fastenings are bolts and nuts. Hickory crank pins and cherry driving boxes; fluted, or channeled, main and side rods are of hard maple, and cab is whitewood.

Cab windows are glass (not mica), and sashes built up of maple veneer. Those in front of cab—the hinged ones—are paneled below the glass.

A feature that adds greatly to the attractiveness of the model is the bright finished parts in brass. All rod and guide cups are of this, and in size and shape are to scale. Valve stem extensions on front of steam chests, flag holders, or sockets, on ends of pilot beam, hand rails and standards—the rails tipped with ornamental balls made separately and screwed into ends of rails—a brass chime whistle on side of dome, and boiler accessories in cab, such as throttle-box—or steam turret—extending through front of cab into base of dome casing and having on its inner end the throttle stuffing-box and bracket, with three gauges—steam, air and coach heater, and the throttle lever and curved slide rest.

The reverse lever is complete with its latch, latch spring, trigger and links, and two bar quadrant notched for close cut off; a perfect model of a Westinghouse D-5 Engine brake valve, and an equally perfect Nathan sight feed lubricator. These two latter, if plated, would be just right for watch charms; they, as well as the whistle, gauges and other brass parts requiring a lathe, were produced by a model maker, a good friend who took much interest in my little engine.

The fire door is built up of metal with hinges, spring latch and combustion openings, and has door chain from latch to cab roof, chain provided with coil spring—the very common handhold for protection of fireman's left hand in the almost continuous performance of opening and closing the fire door for every scoopful of coal —in this case the spring is smaller than a straw. The cab roof ventilating trap has adjusting rod and thumb nut.

DESCRIPTION OF TENDER

The tender is a pine block, hollowed to reduce weight, and metal sheathed all over—coal pit and all—and with flange around top with ½-round finish (of brass wire) on upper edge. Sheathing fastened to body with pins (with heads an inch to the foot!), thereby giving the rows of proper sized rivets.

Manhole, with hinged cover, on top at rear end; two tank boxes with hinged covers—one on each side—for the spare tools, jack-screws, extra air hose, etc. Just in front of the left tank box is the small one for ice and the water jug, and the jug itself—an inch to the foot and about the size of a thimble—is in the box. The coal gate is built up of wood, as they were then, two uprights with horizontal slats. Tender frame is wood with the heavy end sills—or buffer beams at front and back, and on the latter the draw bar casting with curved buffer. This "casting" and buffer were built up of ⅛" iron plates, some bored for dowels on others, and all riveted together. The tender wheels are cast iron with steel axles. Wooden ones were turned up, same as for engine truck, but the job of carving the spoke centres in eight wheels looked too big, so a pattern was made of a solid wheel, castings procured and lathe finished.

The tender trucks are fitted with the regulation brake rigging—wooden brake beams, brake heads and shoes. The auxiliary reservoir and brake cylinder are wood, the latter with brass piston rod connecting to usual horizontal equalizing, and truck levers, and brake rods, and all shoes will come up to the wheels by a pull on the hand brake rod. The auxiliary reservoir has a brass triple valve body as complete and true to scale as the lubricator and brake valve already mentioned as being in cab. Tender steps, iron, with wood "treads." Brass hand irons on front of tank and back of cab; metal apron between engine and tender, and iron ladder up back of tender.

The finish is black—several coats of black paint and varnish. The lettering and numbering, which shows up poorly in the photos, though really one of the crowning features, was done with artist's oil colors and little camels' hair brush. The form, size and colors were standard on the Michigan Central at that time; colors are a rich yellow with red shading.

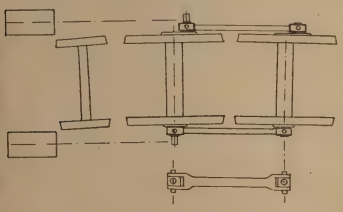
Inspection is usually followed by the query, "That's a real working model, isn't it?" and "How long did it take to make it?" When

told, "Spare time off and on for 10 years, though not by any means continuous spare time," the rejoinder is, "How could you ever have had the patience?" etc.

When I look back at the time, labor and patience expended—enough to have completed several working models—I wonder if there was no fool-killer at that time, or if he missed me accidentally. But, even so, I take some pride and satisfaction in the result, and do not regret the necessary effort.

A PECULIAR FRENCH MINIATURE LOCOMOTIVE

Mr. W. G. Landon sends us the following article and a sketch which he thinks will interest our readers. "I have often thought that French Mechanical Engineers must have for their motto "Try to make two parts where only one sufficed before." I could give several illustrations of the Walschaert gear as applied to locomotives where numerous useless parts have been added, but that is another story.



The subject of this article was seen at a fair in France about 15 years ago. The locomotive was a 2—4—0 type about 20" gauge and hauled passengers on a circular track about 40 ft. in diameter. The peculiarity of this design was that each axle was set radially to the centre of this circular track. This involved side rods of different length as well as knuckle joints. Theoretically this was a poor arrangement and practically the engine would have run all right with parallel driving wheel axles; or as the load was light, a single driver would have met the requirements. Probably the outside wheels were larger than the inside to compensate for the difference in length of rail. The French are nothing if not exact. However I did not have an opportunity to measure them with 24" wheels the difference would have been about 1".

½" SCALE LOCOMOTIVE

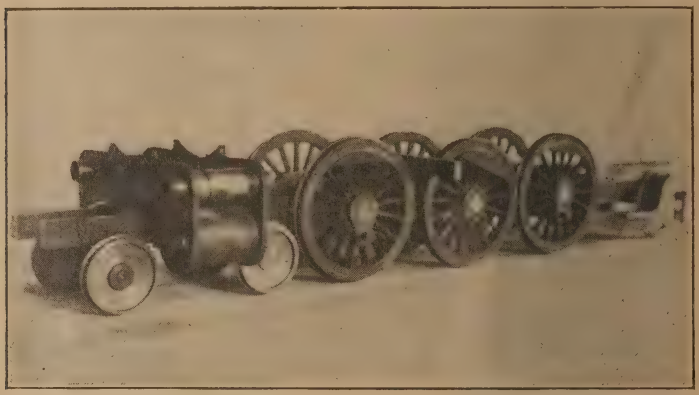
By W. G. Landon

We have just received from Mr. Landon a photograph of his Locomotive at the present time, showing how much work he has accomplished. (See illustration on first page of this issue.) On page 25 of the February issue of The Modelmaker is a pretty good description of the construction of this model. It certainly looks like a very nice piece of work and we have no doubt that when Mr. Landon has it finished he will be well satisfied with its performances. He certainly deserves great credit with the way he has persevered after so many interruptions. We wish him every success in his work.

MODEL PACIFIC LOCOMOTIVE

By Cecil G. Hamilton

Please find enclosed snapshot of my model Pennsylvania Locomotive (as far as it has got). I am using Mr. Coventry's castings and they are really very



good. The model is ¾" scale Pacific Type K4S used by the Pennsy for main line passenger service. I am working on this class of Locomotive almost every day and have all the details off pat, which helps quite a lot.

It will be noted that the cylinders are built up of steel, this in my opinion being better than the casting. Just at present I am carrying out a series of experiments with main and side rods in maleable cast steel; this, I think, being an easier way than hacking them out of a steel bar, and then it is not necessary to have the flutes milled out. The results of these experiments will in due course be available for readers of The Modelmaker.

I never thought that mild steel could be so hard until I started work on the main frames, but now that they are finished I don't mind.

Mr. William Wilson, 140 23rd Avenue, San Francisco, Calif., would very much like to get in touch with any Modelmakers in California with a view to the formation of a Model Engineers Club. At present time he writes he is very much interested in the construction of Model Steam Boats. We know there are a good many readers of the Modelmaker in California who are interested in Modelmaking and especially Model Boats and we hope that a goodly number of these gentlemen will immediately get into correspondence with Mr. Wilson or otherwise make his personal acquaintance with a view to the formation of real live Model Engineers Club.

Mr. R. W. Jacobs, 115 North 16th Street, Kenmore, Ohio, writes that they have adopted the following name for their Society "The Akron Association of Model Engineers." At present they have no regular meeting place, but they go to each others homes where they have workshops generally on Sunday afternoons. He will be very glad indeed to hear from any of our readers in his locality who are interested in Model Work. At present there are eight members with a good number of prospects. The members are all interested in Railway Models, both steam and electric. Two locomotives have been completed, one an American 4—4—0 of 4″ gauge. It is complete with all fittings and gauges on the boiler. The other is an Atlantic 4—4—2 Type of 1¾″ gauge. This locomotive has been under steam a good many times. They have two Locomotives under construction one an Electric Locomotive of 2″ gauge scaled down from an inter-urban electric freight locomotive the plans of which were in the Electric Railway Journal. The other is a Steam Locomotive Mogul Type 2—6—0 of 1¼″ gauge externally fired. Mr. Jacobs would like to get some good photographs taken of these locomotives and would like to get some suggestions on the best method of taking good photographs suitable for reproduction. Here is an opportunity for some kind photographic friend living within a reasonable distance of Mr. Jacobs to offer his services and apparatus and show these boys how to make some real good pictures of the work they have accomplished.

Ohio readers should all try and join up with this association and help to make it a real live organization even if some of them, by force of circumstances, can only be for the time being corresponding members. Get this club going full speed and it would be very easy to form branches in different parts of the state that could be affiliated with the parent organization in Akron. We hope in time that there will be a National Organiaztion whose members are representatives from the different clubs in the various states.

Mr. W. R. Lyon, P. O. Box 256, Atlanta, Ga., had a meeting of some men at his house the other night who were very much interested in model work. We would suggest that all of our readers who are located within a reasonable distance of Atlanta should get in touch with this gentleman with a view to forming a little gathering of Modelmakers for an occasional get-together-meeting.

Last year the American Marine Association offered three prizes to the Marine Boy Scouts at the Kanahwanke Camps for the three best Model Ships. Over one hundred Model Ships were submitted in the competition. Plans are being made to extend this work this summer in other camps. During the past winter a number of Chicago Boy Scouts have built Model Racing Yachts and they expect to hold some competitive races this summer with the boats.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF THE MODELMAKER, published monthly at New York, N. Y., for April 1, 1926.

STATE OF NEW YORK } ss.:
COUNTY OF NEW YORK }

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared W. Edmunds Spon, who, having been duly sworn according to law, deposes and says that he is the Editor and Business Manager of the MODELMAKER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations printed on the reverse of this form, to wit:

1. That the names and addresses of the publishers, editor, managing editor, and business manager are:

Publishers, Spon & Chamberlain, 120 Liberty St., New York, N. Y. Editor, W. Edmunds Spon, 120 Liberty St., New York, N. Y. Managing Editor, none; Business Manager, W. Edmunds Spon, 120 Liberty Street, New York, N. Y.

The owners are W. Edmunds Spon, 120 Liberty St., New York; Wm. Chamberlain, 120 Liberty St., New York.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: NONE.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation, has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

W. EDMUNDS SPON,
Editor and Business Manager.

Sworn to and subscribed before me this third day of April, 1926.

J. M. HARLEY,
Notary Public, New York Co., New York.

(My commission expires March 30, 1927.)
(Seal)

Certificate filed in New York Co. No. 301, Reg. No. 7183.

Since the first of January we have had many complaints from subscribers not getting all their copies of the Modelmaker regularly. We take every care in getting our Stencils correct. We wish our Subscribers would make a complaint at their local Post Office to see if we cannot find out what becomes of all the lost mail. Sometimes we find the reader is to blame in that he has changed his residence and has not notified us to that effect. Readers please remember the United States Post Office Authorities will not forward any second class mail to any Subscriber even if he has notified them of his change of address. All such mail is destroyed by the Post Office. This is a regulation we believe should be altered for the convenience of the public.

When writing for information please enclose stamped and addressed envelope for reply.

THE NEW YORK SOCIETY OF M. E.

The New York Society of Model Engineers held their last meeting at 15 Moore Street, New York City, on the evening of April 13. Several new members joined, and a large attendance was on hand. They all had a very enjoyable evening.

Mr. Berg brought his 4—4—0 American Type 2½" gauge Locomotive, and Mr. Lozier showed a 1¾" gauge Atlantic Type Locomotive, a freight car and a cattle car. Mr. Bosshardt brought a 4-cycle Gasoline Engine, 1¼" bore, which he had designed and constructed. Mr. Bray exhibited the completed pilot truck for a ½" scale, Pacific Locomotive.

The next meeting will be held on Tuesday, May 11, at 7:30 P. M. Mr. Grimke will give a short talk on Model Locomotive Cylinders. Mr. Berg will speak on Locomotives, and Mr. Bray will also make a short address. All interested should communicate with Mr. A. A. Singer, Secretary, 15 Moore Street, New York City.

FOR SALE

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Electric Motor Stampings. Small sizes suitable for electric motors for model locomotives. Modelmaker, Box 10, 120 Liberty Street, New York.

FOR SALE

Constructional Blueprints — 24" Model Racing Yacht, as illustrated in February, Modelmaker. 1 sheet, $2.25. Perry's Flagship, the brig Niagara, 3 Sheets, $5.00. These blueprints give all details necessary to build above models. A. R. Ferris, 284 East 151st Street, Cleveland, O.

Drawings made to order for model locomotives (Amer. Practice). Crater, 458 Colonial Rd., Roselle Park, N. J.

Blue Prints of Ships for Modelmakers, send for circular. G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

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Wade Lathe No. 1 with or without accessories. Must be in A-1 condition. State lowest price. W. L. Scott, 19 Ellsworth Avenue, San Mateo, Calif.

A 2¼ in. gauge steam locomotive, send particulars and prices to F. C. Heneken, 510 Monmouth Street, Jersey City, N. J.

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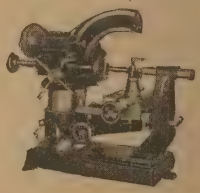

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MADE BY MR. G. B. DOUGLAS

THE MODELMAKER

Published by SPON & CHAMBERLAIN

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Vol. III, No. 5

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OUR FOREWORD

Our High and Manual Training Schools have well equipped shops for Woodworking, but the work done seems to be mostly in the making of uninteresting things, bits of furniture, and so forth.

Mr. Roy F. B. Shaver, Inst. in Woodwork in Los Angeles, has introduced in his classes a novelty that should take with our boys. The construction of a well designed V-bottom "R" class Model Sail Boat.

The Los Angeles Evening Herald has adopted this classy model and are offering four silver trophies for a competition amongst boats built to this design. The Regatta will be held in June on the lake at Westlake Park, Los Angeles.

We have before us a full size drawing and full particulars of the construction of this Boat.

This information reaches us just as we are featuring a similar Sail Boat designed and constructed by one of our subscribers.

We are glad to see such a tremendous amount of interest being taken in this delightful sport. A sport that the poor boy, old or young, as well as the rich boy, can take part in.

Mr. Ernest S. Macgowan, 836 Security Building, Minneapolis, Minn., is very much interested in Models and believes there are sufficient men of the same mind in his vicinity to form the nucleus of a Model Engineers Club. We hope that all of our readers living within easy reach of Minneapolis will write this gentleman, or get into personal touch with him. In our Foreword of April we gave a list of the Model Engineers Clubs in the U.S. We hope Minnesota will be the next on the list.

Please don't forget to mention the Modelmaker when you write to our Advertisers.

Mr. James Everest, 2023—47th Ave., Oakland, Calif., is very much interested in Model Work, and is now working on a Coventry P. R. R. Passenger Locomotive ½" scale. Mr. Coventry has sold a good many sets of this Locomotive and very shortly a good many of them will be under steam.

Mr. Donald Umphrey, 328 Quincy Ave., Cottage Grove, Oregon, is very much interested in Model Work and would like to get in touch with any other Modelmakers in his district with a view to an occasional get-together meeting.

A MODEL TEN WHEELER LOCOMOTIVE OF 1863

H. J. COVENTRY, ASSOC. MEM. A. S. M. E.

The subject for this model was built in 1863 by Thatcher Perkins for the Baltimore and Ohio R. R. and was one of a group that worked through passenger traffic over the seventeen mile grade between Piedmont and Altamont until 1890. These engines had cylinders 19″ by 26″ with 64½″ drivers and weighed 90,700 pounds. 68,300 being available for adhesion. The boiler was 18′8″ long from backhead to front tube plate, and smallest ring 49″ dia. 138 tubes 2¼″ dia. provided 570 sq. ft. of heating surface, to which the firebox added 59 sq. ft. and a combustion chamber an additional 62 sq. ft., making a total evaporating surface of 691 sq. ft., grate area 18 sq. ft. Wood was used for fuel.

The model to ½″ scale was built for Mr. Edward Hangerford, Centenary Director of B. and O. R. R. by whose courtesy the writer is enabled to present these notes and illustration. A working model—that is a self propelling steam model—was not desired, but correctness in external appearance was made the chief desideratum. The model was to represent the engine as it was in 1863, and not as it now stands as an exhibit in one of the company's roundhouses. To this end much information was gathered from Mr. O. C. Cromwell, Assistant Chief of Motive Power of B. and O. R. R., and the writer is indebted to this gentleman for his assistance and suggestions in obtaining a closer degree of accuracy to the original engine than would otherwise be the case.

The model is 26″ long, 2½″ gauge of track. Frames are bronze castings of correct bar type, wheels of gray iron, drivers being 2⅝″ dia., the main and front drivers are flangeless. Side rods are of steel, crossheads cut from solid metal. Cylinders are made in pairs, with half saddle. Steam chests are cast solid and have mouldings around the top. The chests are held to the cylinders by means of the shank of lubricators, which screw into cylinder.

The boiler is of wood, covered with sheet brass, while domes, smokebox and front are bronze castings machined all over. Stack is built up of sheet brass. Front bumper beam is of wood, while the pilot is a bronze casting. (The actual engines had wooden pilots and cabs.) The shackle bar is cut from steel, also the

knuckle and bolt, the pocket is cut from solid metal. The cabs of the actual engines being of wood averaging 2½" thick gave a good opportunity of making the model cab of castings there being six in number ⅛" thick, the window sashes are thin strips of brass soldered in place on the inside. The extra weight at rear end is also an advantage in balancing the weight of cylinders and smoke-

box, making the model roll easily and smoothly when pushed, or pulled.

The paint scheme is for wheels, vermillion; boiler and domes, black, with polished brass mouldings and bands; pilot, black; cab venetian red outside, light green inside. Lettering in yellow, lining in yellow and red. Side rods, crank pins, brasses, and shackle bar polished.

In an article published in the Modelmaker last year the author, Mr. G. A. Cuthbertson, on page 156, remarks he does not know of any place in the United States where they have a collection of Models similar to that shown in the South Kensington Museum in London, England. Mr. Ernest S. Macgowan writes us that he thinks our readers would like to know that there are two very fine collections of boat and ship models, one at the Institute of Technology, Boston, Mass., and the other Smithsonian Institute at Washington, D. C. If any of our readers know of any other collection in the U. S. that is open to the public we should be very glad to have the address and mention it in a future issue of the Modelmaker. Such collections are very interesting and instructive to all who are following up this delightful pastime.

MODEL OF CLIPPER SHIP "LIGHTNING"

By G. B. DOUGLAS

I am sending you a photo of a model of the Clipper Ship "Lightning" recently completed by me from the plans I have advertised in your magazine.

The model is ⅛" scale and was built in about 6 weeks' time.

A few remarks on the ship's performances will, I think, be of interest to your readers.

"Lightning" was built by Donald McKay at East Boston, Mass., to the order of James Bains, in the winter of 1853-4 at a cost of £30,000 and on her arrival in Liverpool was furnished and decorated below at a further cost of £2,000.

Her measurements were: Tonnage builders 2,096 tons; register, 1468 tons; burthen, 3,500 tons. Length, 244 feet. Beam, 44 ft. Depth, 23 feet. Dead rise at half floor, 20 in. She was one of the sharpest ships ever built. Capt. A. H. Clark said of her, she had long, concave water lines and at her load displacement line, a cord from her cut water to just abaft the fore rigging showed a concavity of 16 inches. Mainmast deck to truck, 164 feet; foremast, 151 feet; mizzen mast, 115 feet; main yard, 95 feet; lower studdingsail booms, 65 feet. The spread, 13,000 yards of canvass under all plain sail.

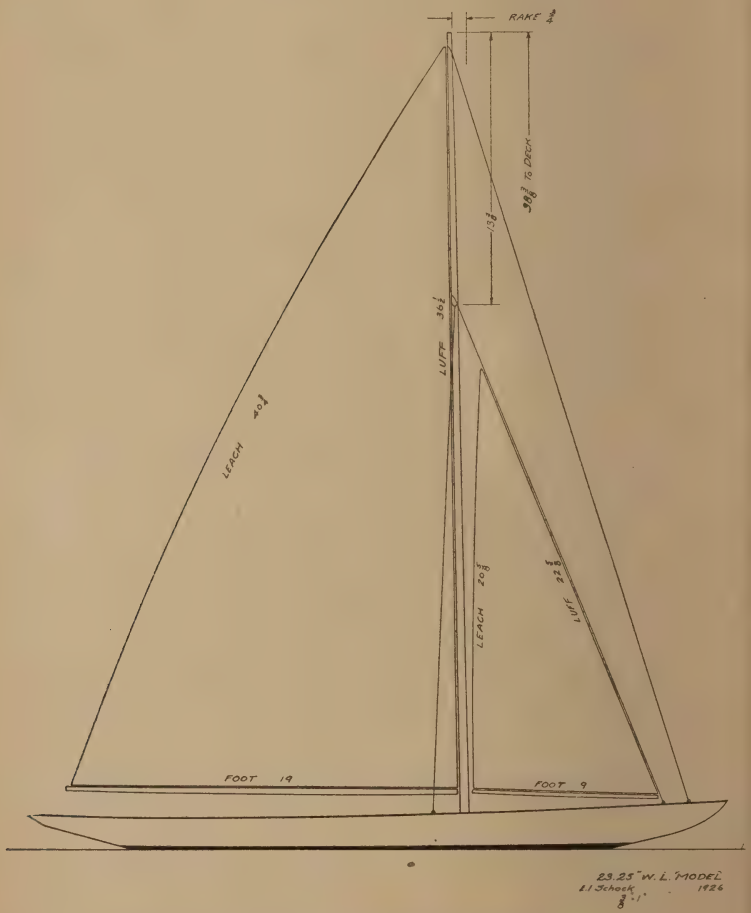
On her first trip from Boston to Liverpool she made the run in February-March, 1854, from Boston Light to Rock Light in 13 days, 19½ hours and according to her log of March 1st in strong gales was making 18 to 18½ knots; the day's run being 436 miles, a day's record which has never been equalled by a sailing ship.

She left Liverpool for Melbourne on her first voyage on May 14th, 1854, and arrived out July 31st, 77 days. Left on her return, August 20th and arrived at Liverpool October 23rd, in 64 days, 3 hours and 10 minutes. A record that has never been broken. The round voyage, including 20 days in port, was only 5 months, 8 days and 21 hours. On this voyage in ten consecutive days, she sailed no less than 3,722 miles, her best day's run being 412 miles.

On this voyage she brought home gold and dust to the value of £1,000,000 sterling.

During the Sepoy Mutiny in 1857 she was chartered by the British Government to carry troops to India.

The "Lightning" on October 31st, 1869, while alongside the pier at Geelong, Australia, with 4,000 bales of wool on board, caught fire from spontaneous combustion and was burned to the water's edge and sank.



Sail Plan of Mr. E. I. Schock's Model Yacht.

A TWO-FOOT WATERLINE MODEL YACHT

By E. I. SCHOCK

For the beginner at model yacht building and for the man who wishes to have a model that is easily moved from place to place without special boxes, I believe a boat of this size and type is very satisfactory.

The fin-keel may be removed and the rig unshipped, making a very portable boat.

The model shown in the accompanying plans is 23¼ inches waterline, 9 5/16 inches beam, 34½ inches overall, and has a draft of 9 inches.

The hull is built up in the conventional way of boards cut to shape inside and outside, then glued together. After the glue has set a block of wood is fastened inside the boat, and the model is held in the vise by means of this block while the outside is shaped. For the outside I use the smallest plane I can buy, a Stanley iron plane about 3 inches long. This is a very satisfactory tool, for it is short enough to slide around the curves of the hull, and can be held in one hand. For the cross sections I use cardboard templates. Thin wood makes better ones if you have it. After it is planed smooth the hull may be finished on the inside with a big, long-handled gauge, outside bevel. For this job I hold the model between pillows to protect the outside. Leave the hull thick in way of Rudder Stock and Keel Bolts. The deck beams are carefully notched into the hull, making a little dovetail joint. I do not crown the decks, as a flat deck saves much labor in fitting, and looks very well on small models.

Before putting on the deck all fittings must be fastened in place, both on deck and below. The keel clips must be a strong and watertight job. The vertical rudder stock and tube are very much easier to fit than slantwise ones. I have had one very difficult and trying experience with a sloping rudder, and shall try them no more.

Deck fittings may be bought from model fitting dealers, or made at home. The home made ones are stronger and can be made the size you want them. Bought ones are very expensive.

The rudder action shown on the Lines Plan is this:

A double ended tiller is held amidships by a strong elastic and a "runner" such as is used on tents. The line leads through an eye bolt amidships and is fastened to another eye forward. The main sheet is fastened to the aft end of this tiller. This rig is very easily built, and works almost as well as the very complicated ones in use on larger models.

The Rudder is a piece of sheet metal, preferably something light. It is riveted to the stock, which in turn is split with a hacksaw to receive the blade. The tiller has a square hole in it, which fits over a square part on the stock. It is held on by a screw fitting into a tapped hole in the rudderstock. By removing this screw the rudder may be unshipped.

The fin is held in its clips by small countersunk head bolts. This does not look very rigid, but if the model is lifted out of the water by the hull and handled carefully these will hold.

I have this rig on a 39-inch model which has been in use twelve years. It is still strong. The lead bulb on this boat is about 8 lbs.

The drawings do not show the lead bulb for the keel. No two builders will get exactly the same weight of hull, so that each keel should be determined by experiment.

The rigging on this boat is dark green braided fishing line. All lines have hooks at both ends so that they may be removed easily. The sails are Lonsdale Cambric, finished with Wright's Bias Tape. The selvage of the material parallels the leach of each sail.

In making spars the white pine sticks are planed square, tapered, planed octagonal and then round. Spars, hull and deck should be scraped before sanding and sandpapered as smooth as possible.

To fasten a sail to a spar stretch a fine enameled radio wire along the spar next to the sail, fastening both ends securely. Lace the sail to the wire, then fasten the wire to the spar with double pointed tacks bent from small common pins. By this method you avoid having lacing around the spars, which gives the yacht a more realistic appearance.

I have used shellac on decks with perfect results. Valspar varnish of course is better, but it dries slowly. The hull should have not less than four coats of paint, each coat sanded to make a smooth back for the next. The last should be enamel, and left bright. It is not wise to use steel wool in place of sandpaper. It is fast, but scratches.

When finished the model is placed in the bath tub for keel experiment. Everything in place. Junk of any kind is piled on deck

until she floats on her designed waterline. The weight of the junk is the weight of lead required for the keel.

The junk is then removed and the model pressed down with a finger to get the position of the center of gravity of the lead. The model may be adjusted for trim by pressing down on her deck in different spots and when the correct trim is found the spot marked. The center of gravity of the lead should come just below this point.

When the model is in the water you cannot see her waterline from above. To see it from below put some polished pie tins on the bottom of the tub to act as mirrors. With these the contrasting colors of the waterline can be seen.

These suggestions, while not very complete, may be of some help in building a first boat. Much of the detail of hull building I have omitted because good books on hull construction are available in libraries.

The plans shown are almost exactly like those of one of my models, and should produce a good, fast boat.

BOOK REVIEWS

Sailing Ships at a Glance, by E. W. Hobbs, A.I.N.A. xviii, 113 pages, 150 illustrations, size 8½ x5¾, cloth, $2.50. A pictorial record of the evolution of the sailing ship from the earliest times until today. An extremely interesting historical sketch showing the progress of shipbuilding from period to period including illustrations of a great variety of different types of sailing vessels. While only giving a few details of construction it will still prove of very considerable interest and value to all who are interested in the construction of old time model sailing ships.

Amateur Telescope Making, by the Rev. W. F .A. Ellison and others, 102 pages, 61 illustrations, size 8x5¾ inches, cloth, $2.00. Work is divided into seven parts as follows: 1. Mirror Making and Mounting a Sun Telescope, by R. W. Porter, M. S. 2. The Amateur Telescope, Rev. W. F. A. Ellison. 3. Methods of Silvering. 4. Miscellany by Albert J. Ingalls. 5. Telescope Mounting From Automobile Parts, by C. Ions. 6. A Telescope That Anyone Can Make, J. M. Pierce. 7. Bibliography. There is very little practical information to be had on this subject so this small work should prove helpful to all those interested in this fascinating subject.

We have had inquiries from several of our readers for stampings for small electric motors suitable for electric locomotives. If any of our readers know where these can be purchased, will they kindly send the address to the Modelmaker.

NEW YORK SOCIETY OF MODEL ENGINEERS

The regular meeting of the New York Society of Model Engineers was held at 15 Moore St., New York on the evening of May 11. There were twenty-four members present. Mr. F. R. Pope, the Chairman, presided.

Mr. Berg gave a short talk on Locomotive wedges and pedestals, and Mr. F. D. Grimke spoke on the construction of locomotive cylinders.

The folowing models were exhibited. A 2-step Hydroplane, 39″ x 11″, engined with a 2-cylinder Westinghouse ¾″ x ¾″ single acting steam engine, with a centre-flue boiler. A 2-Cylinder Westinghouse steam engine direct connected to a centrifugal pump. A set of castings for a P. R. R. K. 4s Locomotive, 2½″ gauge, ½″ scale. A single Cylinder, 4-Cycle Gas Engine, with overhead poppet valves and some photographs of other models. These models greatly interested those present.

The Chairman announced that there was to be a Competitive Model Locomotive Construction Contest and that a friend had promised to donate a silver cup to the winner.

The rules for the contest were roughly outlined as follows:

Contest open only to Members of the Society in good standing.

Loco must be built to a definite scale.

Must be an actual working model.

True in every detail to its prototype.

Details to be to scale.

Workmanship and finish to be considered.

Contest to close June 1, 1927.

A committee was appointed to consider and put into definite form the above recommendations so that they can be voted upon at the next meeting.

The next meeting will be held on June 8. When Mr. Berg will give a talk on the Baker Valve Gear and will demonstrate with a sectional model. Mr. W. Elliott will give a talk on Model Power Boats.

The members especially interested in Model Power Boats will have an informal meeting at the above address on May 25th at 7:30 p. m.

All communications should be addressed to Mr. A. A. Singer, Sec'y N. Y. S. M. E., 15 Moore Street, New York.

Principal contents of the Model Engineer for February 4, 11, 18 and 25: Method of Making Small Wood Pulleys. A Working Model of a 1″ Scale Locomotive Chassis with Cylinders and Valve Chests in Half Section. Annual Speed Boat Competition. Locomotive Boiler Construction by "L. B. S. C." Locomotive Prototypes. Two Disc Cutters. Electrolytic Rectifiers. Private Electric Lighting. Making Patterns for Roller and Pulley Castings. Adjustable Drill Jig for Screw Dies. The New Work Shop of the Glasgow Society of Model Craftsman. Model Marine Notes. Two Model Vertical Steam Engines. Making a Set of Corebox Planes. A Hand Press for Small Jobs. The Construction of Stream-line Apparatus. Recent Inventions. Queries and Replies. Practical Letters. Club Notes. Etc., etc.

Model Railway News, contents for May, 1926. A Veteran Railway Model Engineer. Mr. M. R. Clarke's Model 3¼" Gauge Single-driver 2—2—2 Type Steam Locomotive, his Electrically Driven 2" Gauge Model G. W.R. 4—6—0 Type Loco "Sir Felix Pole" and his 7/16" Scale Model G.W.R. 4—4—0 City Class Loco "Lord Reading" and Views of his 2" Gauge Garden Railway. Construction of an "O" Gauge Model Railway. An "O" Gauge L.M.S. Railway. Mr. T. W. Marsden's Model 2—4—2 L.M.S. "Columbia Type" Mixed Traffic Loco and Junction of his "O" Gauge Railway. Mr. H. Greenly's Garden Railway System. Advantages of the non-continuous lay-out. L & N.E.R. Standard 12-ton Mineral Wagon. Mr. G. H. Alexander's 50-year old Model Locomotive, Carriage and Van. Scales and Standards in the Smaller Gauges. Mr. N. Evans, "O" Gauge L and N. W. R. Model Railway. Mr. F. W. Hindes' "O" Gauge Locomotive and 4-coach L and N. W. R. Train. Our Mailbag. What We Want. The Model Railway Club Exhibition.

We have just received a very encouraging letter from the American Model Locomotive Co. of San Francisco. They inform us that they have had a big demand for their railroad track which has cleaned them out, but that they will have a new stock shortly. They also inform us they have a number of orders and about 100 inquiries for the "0" gauge locomotive. We are very glad to hear that they are doing so well and hope all our Californian readers will get in touch with this firm who certainly have some very nice models and supplies.

Mr. O. Harry Squier is very much interested in Modelmaking. Last year he finished a locomotive crane. It is electrically operated with universal motion and has a lifting capacity of 40 pounds. He is now working on a Pacific Type Model Locomotive similar to those used for English express passenger traffic. It is designed to operate with 100 lbs. of steam pressure and the main drivers will also be connected through shaft and gearing to a 100 volt A. C. motor located in the tender. He says he believes this combination drive is rather unusual, later on when he has the model finished, we feel sure many of our readers will be interested in his tests of its running capabilities.

Mr. Newton James, Jr., of Los Angles, Calif., has very kindly sent us particulars of the Los Angeles Evening Herald Model Yacht Races to take place next June, also a full sized drawing of their V-Bottom "R" Sail Boat. The boats are to be built by boys and sailed by them. Four handsome silver trophies will be given. We believe a good many of our readers will be interested in this, the fourth annual regatta full particulars of which can be obtained from the Los Angeles Evening Herald.

Mr. J. H. Guild, 33 Cranston Ave., St. John, N. B. Canada, is working on a model of the C. N. R. Mountain Type Locomotive, and seems to be making good progress with it.

When writing to us or to our advertisers for information, please enclose a stamped and addressed envelope for reply.

CORRESPONDENCE

Akron Association of Model Engineers

Akron, O.
May 7, 1926.

The Modelmaker.

Dear Sirs:

Here we are at last. How does the above strike you? After so long a time of talking it over we are now hitting on all "four" and going strong, with bright prospects for increased membership. We have a live bunch, and all fine mechanics. Any assistance you can give us in the way of suggestions, etc., will certainly be appreciated. You can look to the Akron bunch for some results in Model Engineering in the future by the looks of the fine work I witnessed at our first regular meeting, when some of our members showed specimens of their work. We hope to have some good dope for Modelmaker soon, also new "subs." We are getting started about right in line of building models as we have draughtsmen, patternmakers, machinists, electricians and some experienced modelmakers and some fine models. I will have to close the throttle for this time. Hoping to have more for you later.

Yours sincerely,
J. W. Neptune,
130 Paul Court.

F. H.—We think you will find just the information you require about the construction of Model Marine Engines in the first Volume of Modelmaker. The articles are by Mr. F. D. Grimke, and are illustrated with detailed drawings.

T. B. S.—We do not know of any book that describes and illustrates all the parts of a model ship. There are several new books in the press and these will be reviewed in our book columns as soon as published.

We have just received some copies of the Bathe Manufacturing Company's new Catalogue, listing Model Marine Steam Engines, Model Stationary Steam Engines, the various types of boilers with boiler and pipe line fittings and some illustrations of sectional models and patent demonstration models with descriptive matter with a number of notes and useful hints. A charge of 20 cents is made for this catalogue. We would suggest that all our readers interested in this line of model work send two dimes to the above company and get acquainted with the new line of goods this firm has ready for the market.

The Gerold Company advise that the call in the past several years for a Wade lathe with a larger capacity between centers has caused them to bring out the No. 1 and the No. 2 machines with extended bed to accommodate work up to 18" between centers. In every other respect the lathes are the same as the well known standard. There are many jobs on metal where such increased capacity will come in very handy and for woodworking it will prove to be a boon to those desirous of handling longer pieces of work. Deliveries can now be made in limited quantities of this new size but soon the stock on hand will be sufficient to meet all demands.

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½ H. P. Horizontal double acting, piston valve, Steam Engine. (See Modelmaker, June, 1925.) Also Corliss Engine single cylinder, bore 2", about 2½" stroke. Full particulars, Goodwin, 354 75th Street, Brooklyn, N. Y.

NC-4 Seaplane Set, complete, 4½ ft. wingspread, carved propellers, parts cut, instructions, $10.00; eight 2½-inch finished loco drivers, $8.00 Frank Barchard, Jr., Foley, Ala.

The Coming Sport—Buy your sockets for your man-sized glider from Icken, 903 Ray Ave., Ridgefield, N. J.

Blue Prints of Ships for Modelmakers, send for circular. G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

Drawings made to order for model locomotives (Amer. Practice). Crater, 458 Colonial Rd., Roselle Park, N. J.

2-Cylinder Marine Steam Engine, ¾"x¾", $15.00. A Single Cylinder Marine Engine, ⅝"x⅝", $5.00 Box 10, Modelmaker, 120 Liberty St., New York.

Rough Sketching; The Handy Sketching Book, consisting of sectional ruled paper, plain eight squares to the inch, with some useful tables, size 5 x 8, bound in limp card to fit the pocket, price $.35, Spon, 120 Liberty Street, New York.

A B C of The Steam Engine, describing a high speed single cylinder, double acting, horizontal steam engine and automatic governor, with large drawings, price 35c. Spon, 120 Liberty Street, New York.

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Models, Railways and Locomotives, back nos. and Vols. in good condition. Box 10, Modelmaker.

Everyday Mechanics, Nos. 1 2 and 6 of Vol. 1, Nos. 1 2 and 3 of Vol. 2. Box 2, Modelmaker.

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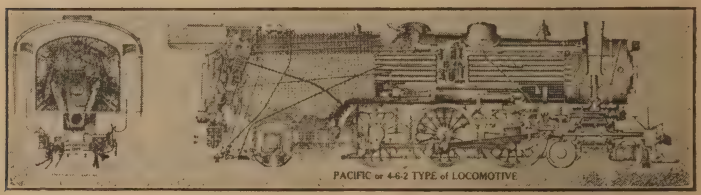

Large Sectional Drawings showing every part numbered and named of the following:—American, or 4—4—0 type locomotive; Micado, or 2—8—2 type locomotive; Consolidated, or 2—8—0 type locomotive, with Walschaert valve gear; Atlantic type locomotive; Passenger and Sleeping Car, each of these 25c. Freight Box Car, 35c; Gondola Car, 35c; Pacific, or 4—6—2 type locomotive, size 44" x 17", 50c.

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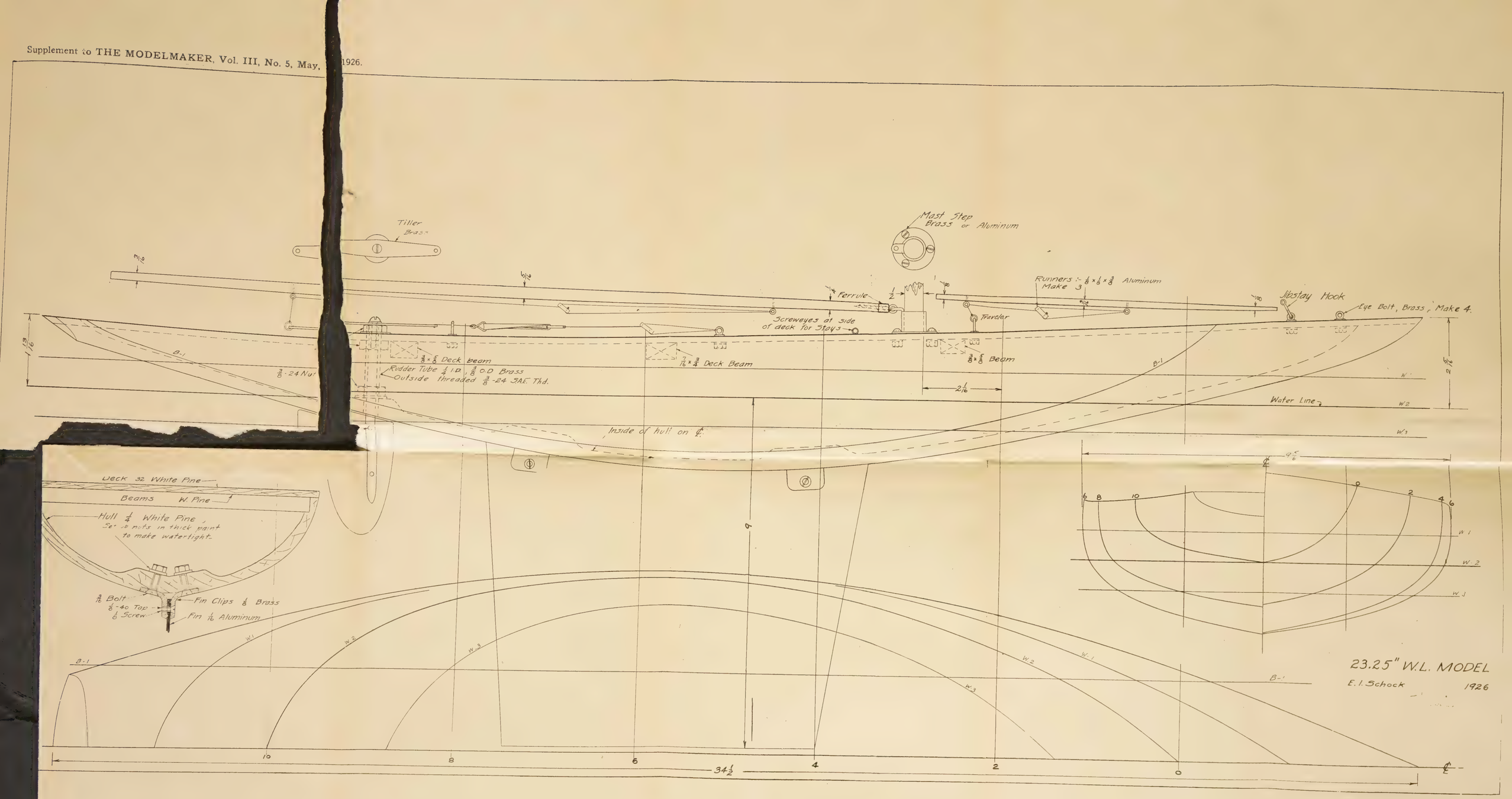

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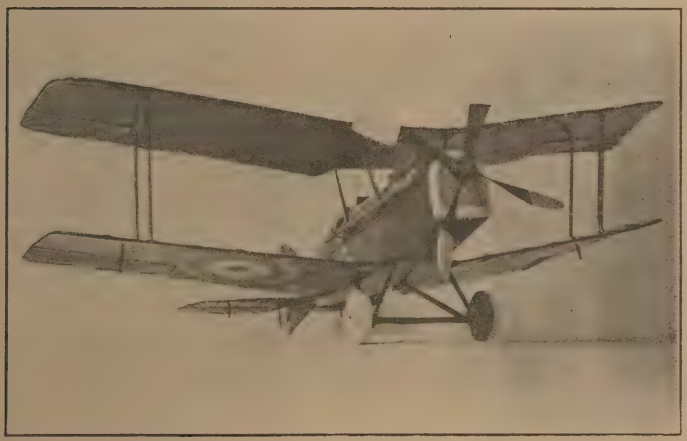

A MODEL BRITISH S. E. 5 A. SINGLE-SEATER FIGHTER, MADE BY MR. OSCAR SCHUWENDT

THE MODELMAKER

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OUR FOREWORD

Model boat building and sailing is certainly becoming one of the greatest pastimes amongst our young men in the U. S. if the reports to hand have any significance.

There were 300 entries in the recent Regatta held in Central Park, New York, under the management of the Junior Shippers' League of America, when fifteen prizes were awarded. The President has received applications from fifteen other cities for membership in the League and for arrangements for regattas in those cities. It is now proposed to hold a National Regatta on Labor Day when the winners at the different regattas will compete for a National Trophy.

The Los Angeles Evening Herald have arranged for a big Regatta this month. They had 275 entries at their 1925 Regatta, and this year they expect a much greater number.

The Detroit Model Yacht Club and the Toledo Model Yacht Club have also full programs. Now we hear that the N. Y. Soc. of M. E. are planning for a Model Power Boat Contest in September. The Marblehead Model Yacht Club and the Brooklyn Model Yacht Club have also to be reckoned with. And we have no doubt that the boys in Montclair, N. J., are all busy tuning up their boats for their annual Regatta.

We would like to see more interest taken in the building of Model Power Boats and in Model Power Boat Contests.

Mr. Secretary, send us in particulars of what your members are planning for the season of 1926. We are always glad to insert such notices with the secretaries' names and addresses in the Modelmaker, as we believe such publicity is beneficial to the club in particular and may be the means of bringing you new members.

Many of our readers will be interested in the Small Curtiss Air Compressor, which is rated to give 60 lbs. pressure. This is something quite unique in the model field, yet a very useful adjunct to the Modelmaker's workshop. Compressed air is an ideal power for testing out an engine under construction or to demonstrate the model when finished. It has many other uses: paint spraying, running small tools, in a gas blow pipe for heating metals, tempering, brazing, or hard soldering, etc., etc. It is easy to handle, clean and effective. Complete sets of castings with detailed blue prints can be secured for a nominal cost.

The last page of this issue of the Modelmaker, we are quite sure, will interest most of our readers who do their best to produce fine examples of model-work. There are many little intricate jobs the Flexible and Portable Shaft Outfit can successfully accomplish, as drilling small holes in awkward places, cleaning up soldered joints that cannot be reached with a file, grinding the seats of small valves, cocks and unions to make them steam tight, reaming holes in metal, buffing and polishing, cleaning out boiler tubes, hollowing out and cleaning up the hulls of model boats made from the solid, and many other like jobs. As to the value of the goods offered, there can be no question, for the quality and perfection of the delicate machinery the S. S. White Dental Manufacturing Co. produce is known the world over. This looks like a pretty good proposition for the Modelmaker. He should write for full particulars about their special offer.

Mr. Roy E. McAdams, Mechanical Engineer, 703 Clifton Street, Springfield, Ohio, has been very much interested in modelmaking for some years. He would like to get in touch with all of our readers who reside within an easy distance of his home, with a view to a get-together meeting, and we hope he will receive a sufficient number of replies from this notice to enable him to form the nucleus of a Model Engineers' Society. He has been very successful in the construction of Model Gasoline Engines both water cooled and air cooled. His 2-cylinder Aero Engine looks very attractive.

NEW YORK SOCIETY OF MODEL ENGINEERS

The Marine Section of the New York Society of Model Engineers held a special meeting at 15 Moore Street, New York, on the evening of May 25. Mr. Walter Elliott was in the chair.

Mr. F. D. Grimke promised to donate a silver cup as a prize for a Model Power Boat Competition.

The following tentative rules were formulated:

The boats to be of the displacement hull type. A metre over all and not to exceed the 12 lbs. displacement.

Competition open to members only.

Each competitor to actually construct not less than two-thirds of the boat.

Hull 1 unit, boiler 1 unit, engine and auxiliaries 1 unit.

Hull may be constructed either of wood or metal.

All entries must be in the hands of the Committee not later than the meeting of the 10th of August.

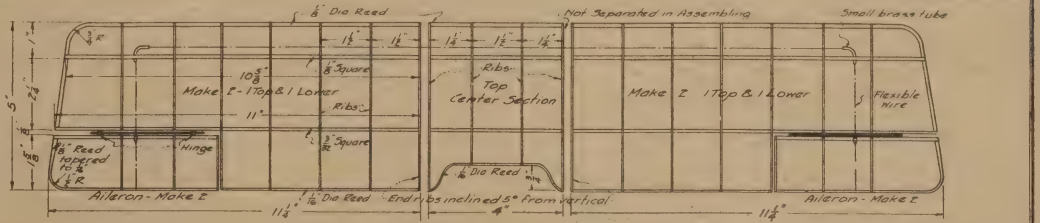
Race to take place in September.

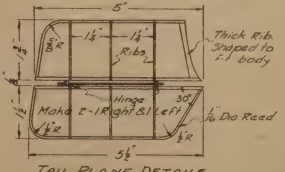
Course and racing rules to be finally decided upon at the meeting of the Society on the 8th of June.

Flash steam installation not admissible.

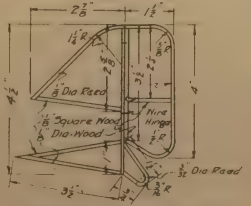
It is hoped there will be a good number of boats entered for this competition.

All of our readers interested in Model Power Boats who are not members of this energetic Society should enter their names at once. Mr. A. A. Singer is the Secretary, 15 Moore Street, New York. This gentleman will furnish full particulars of membership and dues.


Make 2 - 1 Top & 1 Lower
Ribs
Top Center Section
Make 2 - 1 Top & 1 Lower
Flexible wire
Hinge
Aileron - Make 2
End Ribs inclined 5° from vertical
Aileron - Make 2

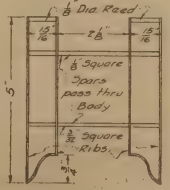


TAIL PLANE DETAILS

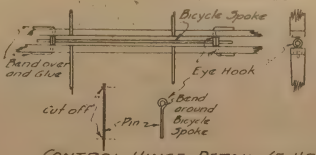


VERTICAL STABILIZER FINS, RUDDER AND TAIL SKID DETAILS

WING DETAILS

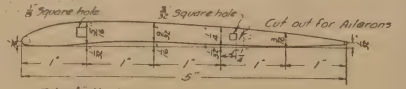


LOWER WING STUB DETAILS

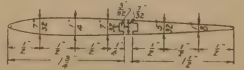


CONTROL HINGE DETAIL (Full Size)

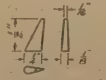
Note. All surfaces (and body) covered on both sides with silk. Given 3 coats of dope (solution of celluloid in banana-oil) and enameled to suit builder.



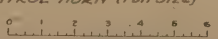
WING RIBS (Full Size)



TAIL PLANE RIBS (Full Size)



CONTROL HORN (Full Size)



MODEL
BRITISH S.E.5.A. SINGLE-SEATER FIGHTER
SURFACE DETAILS

Model Scale: 1" = 1'-0"
Drawing Scale: Half & Full Size
Sheet 3
Drawn by: Oscar Schmueckle

A MODEL BRITISH S. E. 5 A. SINGLE-SEATER FIGHTER

By OSCAR SCHUWENDT

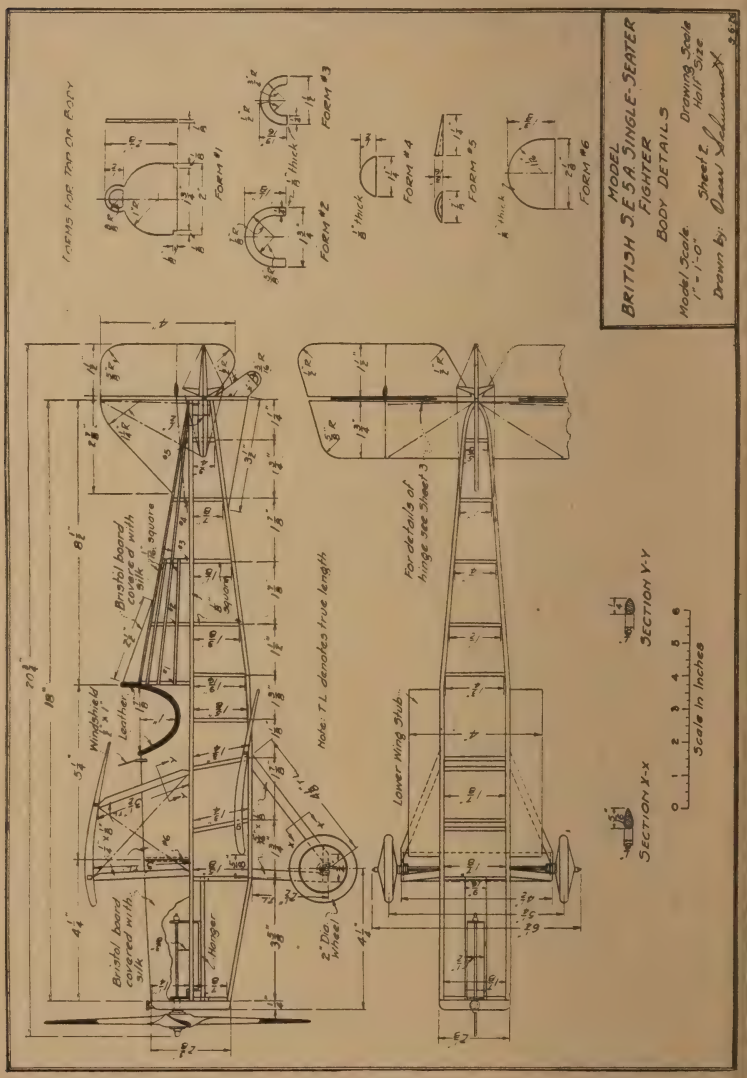
(Drawings by the Author)

The model which is the subject of this article was built by the writer shortly after the World War and is intended to be an exact replica of a plane which was captured by the Germans. The original data was obtained from an article published in the magazine Aerial Age Weekly, some time in 1918, which in turn was a copy of a description appearing in the German aviator journal, Deutsche Luftfahrer Zeitschrift. The aeroplane in question was built by Vickers, Ltd., and numbered B507, wearing further as a recognition initial or that of a squadron an "A," as well as a white circle. The S. E. 5 A. type of plane is equipped with a 200 H. P. Hispano-Suiza motor geared down to a four-bladed propeller, whereas the older type called the S. E. 5 was equipped with a 150 H. P. motor of the same make direct connected to a two-blade propeller.

The dimensions of the plane which appeared in the above mentioned magazine article were all given in milimeters. These were reduced to feet and inches, and the drawings were then made for a model to be built to the more or less standard scale of one inch to the foot and the model then built from these.

The writer has revised and redrafted his original drawings especially for this article, and it is believed that they are sufficiently comprehensive and complete that very little description will be needed. However, a few pointers here and there will probably be of some use to the prospective builder and will therefore be given.

It might be well to state at this point that the model was not built as a flying model, it being the writer's opinion that it would be folly to attempt to fly a model such as this after one has spent several weeks to complete it. However, it could easily be redesigned slightly to make a flying model by dropping the propeller shaft below the top line of the fuselage and adding a motor stick to take the pull of the rubber band motor rather than putting the strain on the small members of the fuselage. It would, of course, be necessary to substitute a different propeller of much higher pitch than the one shown, as this was intended for a scale repro


MODEL
BRITISH SE5A SINGLE-SEATER
FIGHTER
BODY DETAILS
Model Scale 1"=1'-0"
Sheet 2
Drawing Scale Half Size
Drawn by: Owen Mallmann
FORMS FOR TOP OF BODY
FORM #1
FORM #2
FORM #3
FORM #4
FORM #5
FORM #6
Bristol board covered with silk
Wingfield
Leather
Bristol board covered with silk
Hanger
2" Dia Wheel
Note: T.L. denotes true length
Lower Wing Stub
For details of hinge see Sheet 3
SECTION X-X
SECTION Y-Y
Scale in Inches

duction of the real one. The propeller for a flying model could just as well be a two-bladed one, as this would be much stronger as the four-bladed one must be mortised together at the center. Much of the small detail work, which is, of course, the making of an exhibition model, could be omitted. Even with all the detail work and the heavy enamel coating on the coverings, the model weighs less than 14 ounces, so one can see the possibility of making a very good flyer of it.

The suggestions for building will be taken in a somewhat logical order and will follow the same order as the drawings are numbered.

The general overall dimensions can be seen on Sheet 1 of the drawings, which will also give one an idea of various parts of the assembly which might not be clear from the photographs of the model.

Sheet 2 of the drawings gives details of the fuselage and also a few additional parts of the body. The size of the members is for the most part ⅛ inch square wood as noted, and they are put together in the conventional method, using glue and small brads assisted here and there by binding with thread while the glue is drying. The builder will probably prefer to buy his wood all ready planed to the proper sizes from some model aeroplane supply house, but the writer would like to point out that in his model practically all of the wood used was cut from ordinary yard sticks such as are usually used for advertising purposes by most furniture stores. This wood is very light and dry, and as a general rule is very straight grained, which is much to be desired in model aeroplane work. The yard stick is ripped with a fairly fine saw into several strips of convenient width, and then is finished with a plane to the size required. The radiator and forms for the top of the body may be made from any soft light wood, preferably sugar pine. Where bristol board is noted the builder should not attempt to use heavier than two-ply board, as this will be found to be just about right. A word might be said here in regard to the tail skid. On the original plane this is of the spring absorber type, and is arranged to turn behind the stern post and is connected with the rudder cable by intermediance of springs. No attempt has been made to accomplish either of these points on the model, the skid being made rigid and stiff. The angle of incidence of the tail plane is also variable on the original plane between +4.5 and —3 degrees by means of a threaded post riding in a gear-nut and actuated from the pilot's seat. There also has been no attempt made to carry out this detail on the model.

(To be continued)

¼" SCALE PACIFIC LOCOMOTIVE 4—6—2

By MR. F. G. CARTER

I enclose a photo of ¼" scale Pacific loco which I have just completed after working on it almost continuously in my spare time for three years, and give the following particulars of its construction in the hopes that it will give other model makers some data to work on, and probably save months of weary experimenting. It may encourage others to know that this is my first model and constructed with home-made equipment with a card table for a bench. The loco does not closely follow any particular protype and was designed with the idea of crowding the maximum power possible in a 1¼" gauge engine, combined with ability to negotiate moderate curves. Appearance has been sacrificed to efficiency and ease of dismantling for repairs.

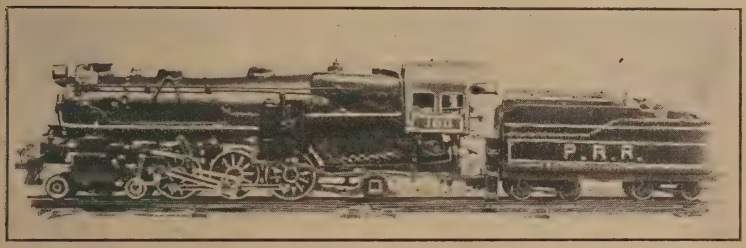
The cylinders are made from bronze castings purchased in England, and together with the six drivers are the only castings used. They are ⅜" x ¾" stroke. They were first made with drilled holes for parts, but the power was low and I decided to chip the parts rectangular. In doing this I got the slots all shapes and sizes and spoiled them. So I made two phosphor bronze plates ⅛" thick and the size of the cylinder port face, cut the ports in the plates, which was a simple drilling and filing job and after cutting ⅛" off the cylinder block I silver soldered the plates to the cylinders, this saved the day.

The valves are P. B. and five sets were made all told. The most successful ones have 1/32" lap and the exhaust cavity is the exact distance between the inside edges of the cylinder ports. This allows early release and probably wastes steam but increased the power 100% over a set of valves, which provided compression and were probably more thoretically correct.

The pistons are cast iron and were fitted with cast iron rings, later I changed to asbestos packing to try and reduce blowing by, but one works as well as another.

The valve gear is Walschaert. First it was arranged to provide for 1/64" lap, this necessitated an eccentric arrangement at the lap and lead lever points to reduce the ⅜" movement of the X head to 1/64". After a little running I found that instead of giving the valve 1/64" movement, this arrangement lost 1/64" movement ow-

ing to wear in the various pins and points and this of course completely upset the timing. So a new set of valves were made the valves having 1/32" lap and a new set of levers made proportioned to give 3/64" movement to the valve. This allows the eccentric movement to be dispensed with, and provides a bare 1/64"lead. The valves are "set" by sight, by leaving the steam chest off. Turning the wheels and watching the movement of the valve. At first this was very misleading as the valve under these conditions would appear to operate correctly but when assembled the pressure of steam on the valve and the friction of the gland took up all the lost motion in the various pins and altered the timing. In later attempts to set the valves the spindle was gripped between the fingers when the wheels were revolved to more nearly approximate running conditions. All the valve gear parts were made from boiler steel case hardened. Cold rolled steel proving too weak and brittle at the



fork joints, which are only 1/32" thick. One other point about the all important valve gear. I found it better to have the crank arms 1/32" longer than design proved necessary to ensure enough movement of the valve and to avoid having to jam the link block down to the extreme end of the link. The gear can be "hooked up" to give the correct valve travel. After making an endless number of eccentric rods of the wrong length an adjustable rod was made and when the gear was adjusted to give the correct port opening, the adjustable rod was removed and used as a jig to drill the holes in the eccentric rods. I had trouble with the main pins moving, which of course allows the crank arm to be displaced from its correct position of 90° from the main pin. This was corrected by screwing the main pins into the wheel, fitting back nuts, drilling thro wheel and pin and driving in a dowel, then finally sweating the whole works. They should be there to stay now.

The drivers are 1½" dia. Smaller than scale to allow for the considerably oversize flanges. Engine and tender truck wheels ⅝" dia. cut from C. R. steel. Trailer truck wheels 13/16" dia.

The boiler is the survivor of four attempts. Loco type, 2" dia. x 12½" long overall. Barrel 20 swg. S. D. Copper. Flues 5. ⅜" dia x 24 swg. All sheets are flanged and rivetted. The Belpaire firebox was made to copy Pennsylvania Practice and provides large steam space although considerably harder to make than the round top type. The inner firebox is 1/32" copper supported by 24 ⅛" bronze stays. Superheater is ⅛" copper tube, two units 4½" long inside. Fuel used is soft coal, or charcoal. The soft coal cokes in the flues and plugs them. The charcoal was at first pulled thro the stack by the blast and the firebox soon emptied, a brick arch partly cured this, but a 1/16" mesh netting was fitted in the firebox over the openings of the flues and is successful in keeping the fire in the box. There is no difficulty in keeping the fire burning fiercely and 80 lbs of steam on the gauge.

The fittings are Pressure gauge 1½" dia., fitted under the cab roof with a sliding door to read same. Water gauge with drain valve. Pop valve to blow at 80-85 lbs, this stays open until the pressure drops to 50 lbs. and further experimenting is necessary here. Trottle, screw reverse gear, two blower valves one for connection to auxiliary boiler for steam raising pump check valve, pump by pass, two displacement lubricators imitating air tanks on the front of a P. R. R. I.1.s. class. Hand pump in tank 5/16 bore x 1" stroke, eccentric driven pump between frames (at present not working thro leakly valves and being impossible to remove without taking off boiler). Five plug cocks were bought to operate the various fittings but these have all been scrapped owing to leaking and seizing and needle valves made to replace them. These have steel needles seating on copper seats and are tight at any pressure by lightly screwing with fingers. These were made entirely without using a lathe. Frames are steel ⅛" thick. Driving boxes P. B. on coil springs. Wheelbase of drivers 4 1/16". No brakes are fitted. Engine truck is equalised and carried on a central spring with four horizontal springs on slides to control lateral movement. Trailing truck is carried on two spiral springs and is built up of brass to resemble a casting. The Worthington pumps and feed water heater is a dummy and contains the check valve and pump by pass. The blower has a single nozzle 1/32" diameter. The dummy headlight generator is brass ¼" high and ⅜" wide, people have asked

me if this actually generates current, there is evidently no limit to what a modelmaker is expected to do. The sand dome is of brass and is a dummy.

The tender is built up of 1/32" brass, rivetted with small pins, sweated and mounted on a 1/16" thick frame. The truck wheels are 5/8" dia. equalised and carried on laminated springs. The safety chains came from the 10c store. The handpump can be entirely removed for repairs by removing four 1/16" nuts. Tank holds about 3/4 pint of water. Regular A.R.A. coupler on front, none on back yet. The loco and tender empty weigh 9½ lbs. Length of engine over couplers 14", tender 7¼" height to top of stack 3 15/16 width of cab 2 5/8".

Having no track the engine has not been tested thoroughly, but I am getting a track and if any readers are interested I will test the loco accurately for speed, drawbar pull, etc. It runs along the floor at about 6 m.p.h. and on the stand it is impossible to stop it by gripping the wheels. A 60 lb. load was hauled on an improvised track over a rough floor.

The engine is painted black but no attempt was made to give a high class paint finish. After a run the engine is covered with ashes and oil, and looks as if it had been through the great war and time spent on painting would be wasted.

The engine has developed gradually. Two years ago it would just stagger around on the stand at 50 lbs. now it buzzes around on 2 lbs. after getting warmed up. Maybe in time I will get it to haul me along. If any readers would like further particulars I would be glad to furnish same, and will be glad to show the loco running to any "fans" who happen to stray this way.

I forgot to mention that the boiler has been tested to 200 lbs. hydraulic pressure and shows small weeps of water at the staybolts but no bulging. I screwed the pop valve down and let the pressure rise to 150 lbs. steam to see how the engine ran at this pressure and the boiler did not seem to mind it.

Mr. Roy Haeusler, 87-45 191st Street, Hollis, Long Island, N. Y., would like to hear from any of our readers living in his vicinity, with the object of an occasional meeting, as he is interested in the construction of models.

Mr. John P. Brooman, Government Wireless Station, Redhead, N. B., Canada, is building a model of the famous sailing ship "Cutty Sark." He would like to get in touch with anyone residing in his locality who is interested in the construction of model boats and ships.

One of our readers writes us that there are a number of model ships to be seen on exhibit in the following places: The Metropolitan Museum of Art, New York; Portsmouth Athenaeum, Portsmouth, N. H.; The Peabody Museum, Salem, Mass., and The Commercial Museum at Philadelphia, Pa. We might also add the New York Yacht Club, who have some very fine ship models, but this collection is only open to members. If any other reader knows of additional places where models of ships can be seen we would like to hear where they are located, so that we can list them. Should any of our readers interested in ship models be contemplating a trip to England this year, with a visit to London, they would find it to their interest to go to the Greenwich Naval Academy, where there is one of the finest collections of model ships in the world. This collection is open free to the public on certain days of the week.

If any of our readers have locomotives, passenger, or freight cars, they would like to place on public exhibit where they will be taken good care of, write to Mr. R. H. Claudius of the N. Y. C. R. R., Room 823, 466 Lexington Avenue, New York. The N. Y. C. R. R. have been featuring an Exhibit of Railway Models for some time in the gallery of the great hall at the Grand Central Depot, New York. Some of these models have been returned to the owner, and now they would like to get other models to fill up the vacant spaces. Mr. Claudius will be glad to give you full particulars.

AKRON ASSOCIATION OF MODEL ENGINEERS
AKRON, OHIO

The Editor, The Modelmaker:

On Wednesday evening, May 26th, the regular semi-monthly meeting of the A. A. M. E. was held at the home of Mr. Grover Merriman, our oldest member. A business session was held, followed by a fine luncheon served by the host and hostess, after which the boys were invited to inspect the host's very fine and well-equipped machine and experimental shop. This was a rare treat for the members. Mr. Merriman is one of Akron's oldest and finest mechanics. As the saying goes, knows his "onions." The club is very fortunate to possess such a fine, able mechanic in its membership, and he holds an honorary membership card. This club has two honorary members, the other being Mr. H. Helmick, who is an engineer and railroad shop mechanic, also a fine modelmaker. These two members have a "job" as instructors to the club, and they are always ready to help. We certainly appreciate their membership and society. The boys finally broke away from the said member's shop at a wee small hour.

The next meeting is called for at the home of our Secretary, Mr. R. W. Jacobs, in Kenmore, on Wednesday evening, June 10th, and looked forward to by all.

Yours sincerely,

J. W. NEPTUNE,

Publicity Agent, Akron, Ohio.

In the last December issue of the Modelmaker we featured an illustrated article describing Mr. G. H. Stegmann's model of the famous old U. S. Frigate Constitution, Old "Ironsides" as she was more familiarly called. This old vessel, at the present time, is in very bad condition. Congress has appropriated $250,000, half of the amount estimated to put her into good repair. The other half is being raised by public subscription throughout the country. It may seem, at first sight, a large sum of money to spend upon the repairs necessary to prolong the life of an old ship, but it will be money well invested if only from an historical as well as a patriotic viewpoint. She was a very fine vessel in her day, and did much, in her numerous fights, to uphold the honor and prestige of the United States not only near our own shores, but in the Mediterranean Sea, where she did good work in the suppression of the Barbary Pirates. Any of our readers wishing to contribute to this worthy object should send their donations to the "Save Old Ironsides Fund," The Seaman's Bank for Savings, 56 Wall Street, New York.

The Woodworker and Art Craftsman, Volume 16, contains descriptive articles on the following: Many chapters on Wood Carving, with folding sheets of designs. Furniture Making, including tables, chairs, settees, book cases, bookshelves, cabinets, overmantles, dinnerwagons, china cabinets. Carpentry, the construction of gates and fences, the laying of floors of different kinds. Fretwork and scroll sawing, pattern making. Forgework, decorative enamels and jewelry making. Manual training work. Marquetry and inlay. Bent iron work. Finishing hardwoods. Repousse work. Picture frame making. Clock cases. Pen and ink drawings. Fillers for different kinds of woods. Miscellaneous articles. Question Box, etc. The articles are all well illustrated. Twelve monthly numbers, price $1.50 postpaid.

Model Engineer — Principal contents for April 1, 8, 15, 22 and 29: A Twelve Volt Farm Lighting Plant. Machining the Components of a Small Power Petrol Engine. "L. B. S. C." on Locomotive Construction. Electrical Condensers. Accumulator Charging. Locomotive Prototypes. Small Steam Cylinder Construction. Setting Out Sheet and Plate Metal Fittings. Model Speed Boats. Locomotive Cylinders. An "O" Gauge Solid Fuel 0—4—2 Tank Engine. The "Sunny Jim" Two Cylinder Marine Engine for Model Speed Boats. Turning a Two-throw Crank Shaft. Electrical Measuring Instruments. A 2½" Gauge American Pacific Locomotive. Model Marine Notes. Recent Inventions. Light Engineering and Equipment. Queries and Replies. Practical Letters From Our Readers.

A CORRECTION

In the Gerold Company's Lathe Adv. for April and May is a printer's error in the price of the No. 1 Lathe. The proper price is $28.00, not $23.00.

When writing to advertisers please mention The Modelmaker.

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Five large fine books full of old time ship designs "Souvenirs De Marine" by Vice Admiral Paris. $50.00 Express Collect. Edgar L. Brown, c/o Schiffman Jewelry Co., Greensboro, N. C.

Blueprints of the 2-ft. Model Sail Boat described in the May issue, one large sheet full-size lines and body plan, one sheet sail plan, price $1.50. E. I. Schock, 57 Edgewood Ave., Longmeadow, Mass.

Railway Centenary — 1825-1925, being an exceedingly interesting historical account of the British Locomotive, cars and signalling apparatus during a hundred years of development, with many illustrations and some larger colored plates, 124 pages, 11 x 8½" paper binding, $1.60 postpaid. Spon, 120 Liberty Street, New York.

Designing — Working drawings prepared; calculation of strength of materials; for your models or actual size; inventor's ideas developed. E. H. Grafton, 6542 Lincoln Ave., Detroit, Mich.

Blue Prints of Ships for Modelmakers, send for circular. G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

FOR SALE

The Coming Sport—Buy your sockets for your man-sized glider from Icken, 903 Ray Ave., Ridgefield, N. J.

Rough Sketching; The Handy Sketching Book, consisting of sectional ruled paper, plain eight squares to the inch, with some useful tables, size 5 x 8, bound in limp card to fit the pocket, price $.35, Spon, 120 Liberty Street, New York.

Gears and Model Supplies of every description. Catalog 5 cents. Experimenters Supply House, Box 10, Station Y, New York City.

WORK WANTED

I make patterns, small castings and working models. Modelmaking is my trade. James Koch, 103 Summit Ave., Linwood, Pa.

WANTED

Models, Railways and Locomotives, back nos. and Vols. in good condition. Box 10, Modelmaker.

Everyday Mechanics, Nos. 1 2 and 6 of Vol. 1, Nos. 1 2 and 3 of Vol. 2. Box 2, Modelmaker.

American Institute of Elec. Engrs. Volumes 1 to 8. Box 4, Modelmaker.

We have been notified by the English publishers of the Model Engineer that owing to the shutdown of the printing plants during their recent National strike the issues of the Model Engineer for May 13th and 20th will not be published. We trust that all our subscribers to that magazine will bear this in mind and sympathize with the publishers in their misfortune. They carried on all through the great war and never missed the publication of a single issue. In fact, this splendid magazine has never missed an issue since the publication of the first number in January, 1898, until this last unfortunate stoppage of a Nation's business life. Let us all wish them better luck from now on.

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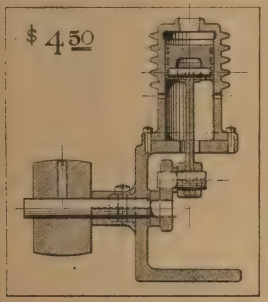

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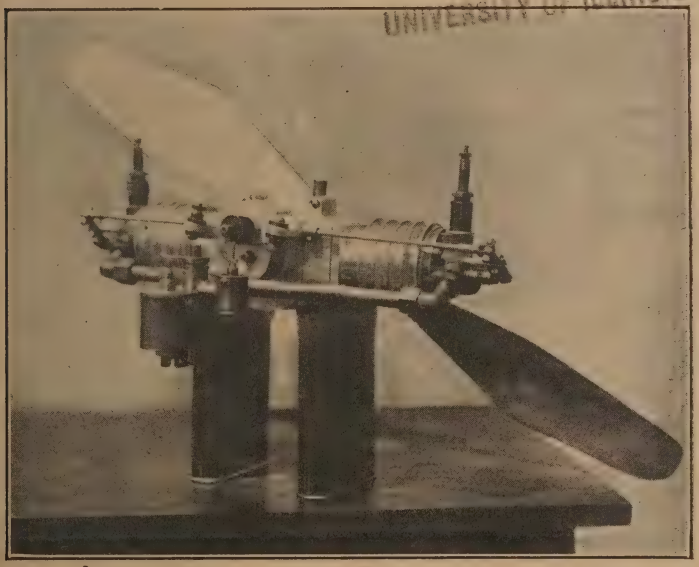

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OUR FOREWORD

One of the most difficult operations for the Modelmaker is the painting, or enameling, of his model.

Metal work should first be thoroughly cleaned with gasoline or benzine (which is better done in the open air). Be sure to remove all grease, rust and corrosion before attempting to do any painting, otherwise the first coat of paint will not adhere, or dry. Good paint and good brushes only should be used.

The first or priming coat should be laid on lightly, but do not have the paint too thick. It may be advisable to thin it down with a little turpentine. The priming coat should be allowed to dry thoroughly; this will make it easier to apply the next coat evenly.

In some cases it will be found more expedient to paint the individual parts and assemble them afterwards, especially where there are a number of nickle, steel or brass parts.

Locomotives, passenger and freight cars—according to the regulations of the railway.

Marine engines—according to the regulations of the line.

Brass work—lacquered.

Boiler and cylinder laggings of Russian iron—dull black, or oiled.

Cylinder lagging of wood—varnished, or oiled.

Passenger and freight trucks—dull black.

Boat hulls — mahogany, or cedar, marine varnish.

Painted hulls — prepare the surface, thoroughly smoothing down with fine sandpaper. Use flat paint to build up a good body. The more coats the better the body. Let each coat dry then rub down lightly with 00 steel wool. Finish with glass enamel, or marine varnish.

Inside of hull—one or two coats of flat paint, or shellac varnish, to protect the wood from damp.

We shall be glad to receive comments from any reader as to his experience, especially as regards to the lettering on locomotives.

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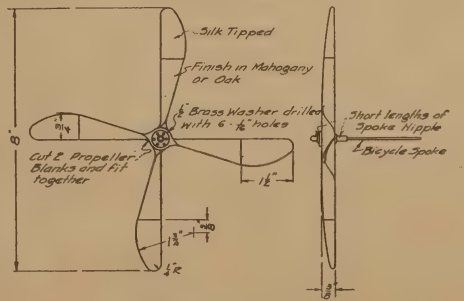
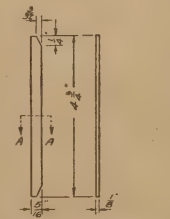
When writing for information please enclose a stamped and addressed envelope.

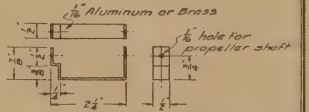

Silk Tipped
Finish in Mahogany or Oak
Brass Washer drilled with 6 holes
Short lengths of Spoke Nipple
Bicycle Spoke
Cut 2 Propeller Blanks and Fit together
8"

PROPELLER DETAILS

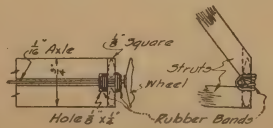


MAIN WING STRUTS

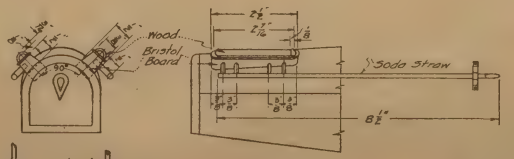
SECTION A-A
(Full Size)

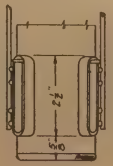


PROPELLER HANGER DETAILS



SHOCK ABSORBER DETAILS
(Full Size)





DETAILS OF
IMITATION HISPANO-SUIZA ENGINE

MODEL
BRITISH S.E.5A SINGLE-SEATER FIGHTER
MISCELLANEOUS DETAILS

Model Scale: 1" = 1'-0"
Drawing Scale: Half & Full Size
Sheet 4
Drawn by: Oscar Schwendt
5-9-28

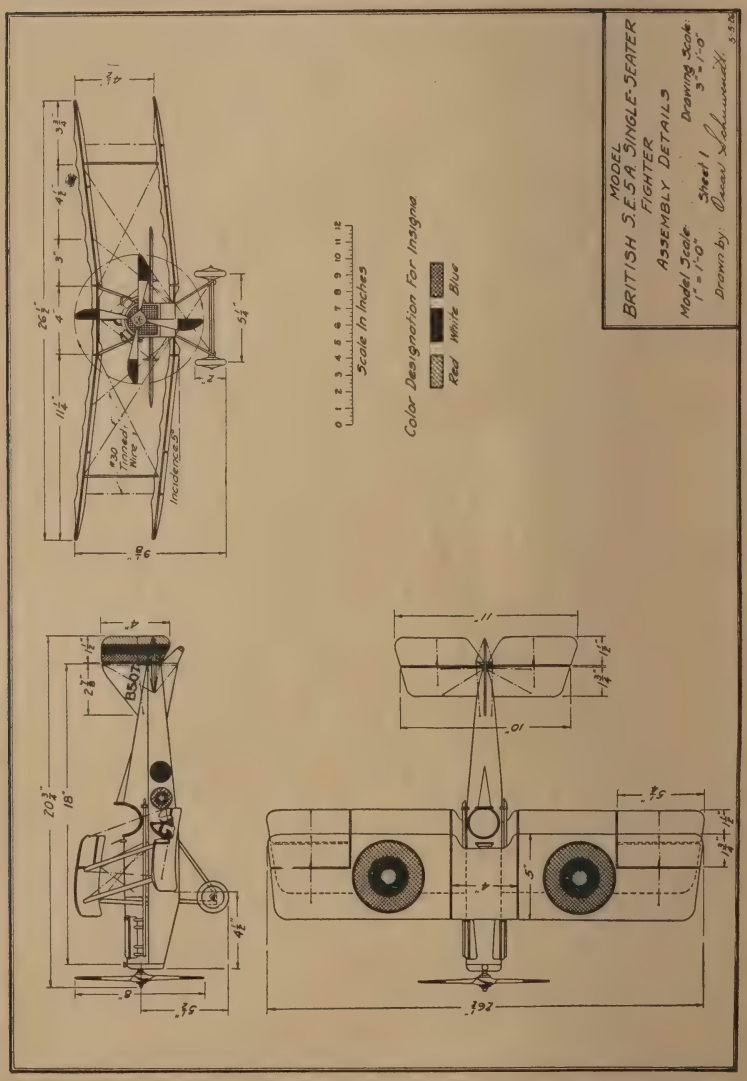
A MODEL BRITISH S. E. 5 A. SINGLE-SEATER FIGHTER

By OSCAR SCHUWENDT

(Drawings by the Author)

(Continued from Page 87)

Sheet 3 shows the details of the various wings and surfaces for the model. Very little comment will be necessary other than that it will be well to cut several ribs out of fairly thick wood and then split them into several thinner ones with a fine tooth saw rather than attempt to cut each thin rib to the required profile. Also in regard to the covering material used on the planes and body. It will be noted that the note on this drawing calls for silk. This need not be strictly adhered to, as any light material ordinarily used for model aeroplanes will suffice. If a very light grade of silk is obtainable that is the ideal thing to use. The writer used some old silk handkerchiefs on his model. By doping the material either with the suggested solution or with a standard preparation sold by model aeroplane dealers, the covering should be drawn up to a nice tight finish. The original plane was painted brown on top and yellow below, while the writer enameled his model black both on top and below, copying after an S. E. 5 plane which was in a Government flying circus touring the country at about the time the model was being built. This is the only really serious deviation from the prototype. The drawing of the main wing shows a flexible wire running through inside the wing connecting the two ailerons together. The purpose of this is, of course, to make the ailerons work together in the conventional manner as on the large aeroplanes, and should be in both upper and lower wings. It should be noted that this wire must be very flexible indeed to accomplish this result, and it is doubtful whether it is worth the trouble, as each rib must be drilled for the wire to pass through, and the small brass tubes must be set exactly right. These holes are not shown in the rib profile. In the case of the writer's model the wire was too stiff, and about the second or third time that the ailerons were forced into action the wire broke, which necessitated the removal of some of the wing covering to repair the damage and then the trouble of replacing it. Since then it has never been tried to work the ailerons. It is entirely up to the builder whether or not this is put in. Although the gap


MODEL
BRITISH S.E.5A SINGLE-SEATER FIGHTER
ASSEMBLY DETAILS
Model Scale 1" = 1'-0"
Sheet 1
Drawing Scale 3" = 1'-0"
Drawn by: Oscar Schmidt
0 1 2 3 4 5 6 7 8 9 10 11 12
Scale In Inches
Color Designation For Insigna
Red White Blue
Incidence 3°
B507

at the aileron and tail plane hinges is shown as ⅛ inch, it is well to keep it smaller than this if possible, as a much neater job will be had.

Sheet 4 of the drawings shows a number of small details which are for the most part clear enough without description. The rubber shock absorbers on the landing gear are by no means essential but increase the fidelity of reproduction, and are also a great novelty to any one viewing the model. The propeller hanger shown serves merely as a support for the propeller shaft, and would have to be redesigned for a flying model. The Hispano-Suiza motors are quite novel and, as the photographs will show, look quite like the real thing when properly put together and painted.

No details are given for the windshield, as this is merely a small piece of celluloid mounted at a slight angle in a small ridge of thin wood glued to the top of the body in the position shown, and is of the size given on Sheet 2 of the drawings. The photograph will also help to make this clear.

It is not intended that the builder must necessarily follow the suggestions as laid out above, but that with the aid of the drawings and by exercising his own ingenuity it is the writer's opinion that a very presentable model true to type can be produced.

We have before us a very small model of the Brigantine "Breda" of Boston. The hull, masts and spars are all cut out of a Walrus tusk. It is made to the scale of 1/32" to the foot by Mr. H. O. Havemeyer, Jr., and is a very clever piece of work. The prototype was built at Portsmouth, N. H. in 1852 and was used by Russel & Co. in the opium trade between India and Canton. The Model is mounted in a cedar case with a glass front. Mr. Havemeyer has built a number of ship models, one of his best was the "Vikin Ship" described and illustrated in the March issue of the Modelmaker. We hope he will favor us with descriptions of other of his models.

Mr. William C. Niesen, 45 Scott Street, Carbondale, Pa., would like to get in touch with any of our readers living within a reasonable distance of his town with a view to an occasional get-together meeting. Mr. Niesen is particularly interested in Locomotive models. A good many heavy coal trains pass through his town, which is situated in quite a mountainous section of Pennsylvania. Some of the grades are very excessive necessitating the use of two heavy freight locomotives as pullers and two of the huge mallet type mountain locomotives as pushers. Four locomotives being necessary for a loaded coal train of about 60 to 65 cars to surmount the grades.

MODEL AEROPLANE ENGINE

MR. ROY E. McADAMS

The engine described and illustrated in this article is the outcome of experiments from time to time covering a period of several years.

It is designed especially for the propulsion of model aeroplanes, but could no doubt be used for other purposes where an air cooled engine of its power output would be suitable.

The writer does not claim that this engine is the last word in resign, but hopes it may be helpful in stimulating a greater interest in model gas engines. As far as the writer can find out, there are very few model makers interested in gas engines.

The engine is 1⅛" BORE and STROKE respectively. It is Four Cycle valve in head type. Automatic inlet valves are used while the exhaust valves are mechanically operated by over-head rockers and long push rods.

¼ H.P. is developed at a speed of about 1,500 R.P.M. The weight of engine as shown but without propeller is 3½ pounds.

As light weight is essential since it is designed for airplane models, aluminum alloy was used extensively in its construction.

The crank case is cast in halves, one-half carrying the timing gear housing, and the other half has pads for breather pipe as well as oil test cock. Bronze bushes are used throughout for main bearings as well as cam shaft and tappets.

Brass timing gears are used and the cam shaft and cam is made from one piece of tool steel.

The crank shaft is turned from the solid and cold rolled steel was the material used. This material has been found entirely satisfactory as to strength and wearing qualities, besides being much easier to machine than tool steel.

Bronze connecting rods of H section are used. They are exactly similar to rods used in large engines.

The cylinders are aluminum castings with air cooling flanges. The readers may wonder why the flanges are so few in number and why they were cast on instead of being machined from solid.

In the first place casting them saved considerable lathe work, and the writer has found from experience that flanges spaced very closely do not have nearly as good cooling qualities as those more

widely spaced. The heat seems to vibrate back and forth between narrowly spaced flanges.

As aluminum is hardly suitable for the wearing surface of cylinders, steel liners are shrunk in the cylinder castings and then finished to correct bore. This form of cylinder construction results in a very light cylinder of good wearing qualities and the aluminum radiates the heat faster than other metals.

Aluminum alloy pistons fitted with three, step cut, cast iron concentric rings are used.

The pistons follow orthodox piston construction in all details. The writer uses two rings in the same groove at the top of piston and finds it superior to rings in a separate groove. The wrist pins are held from moving by a set screw.

In the cylinder heads are located the valves and spark plugs. The heads were made from cast iron as it was feared that difficulty might be experienced in holding securely the valve seats if the head was made from aluminum and valve seats cast iron. The valves are made from steel and are of ample size.

The spark plugs are miniature ones of mica type, and are entirely satisfactory. They are imported from England by the writer.

As can be seen from photo a float feed type of carburetor is used. As it is rather small some difficulty was experienced before one of correct proportions was evolved. A small copper float is used and two small levers actuate the needle valve the same as in some large carburetors. An automatic auxilary air valve takes care of speed changes.

This carburetor is much superior to the simple mixing valve, which was tried at first. A long curved intake pipe leads mixture to engine.

The pads are silver soldered where carburetor fastens to intake pipe. The carburetor can be easily taken apart for cleaning and the moving parts are few in number.

The engine is shown fitted with a simple form of timer, which of course requires two spark coils. Since photos were made a small interrupter and distributer has been constructed.

An ordinary Ford coil was at first used, but as it is rather heavy the writer conducted experiments with small coils, and finally succeeded in making a coil which develops a very intense spark, and weighs only 8 oz. as against 1½ to 2 lbs. for the ordinary coils as found on the market. The small coil has been tested along with the commercial ones and if anything fires engine better. This is probably because of the greater vibrator frequency used.

The propellor shown in photo is 20″ diameter, 13″ pitch and is of cast aluminum. As this propellor weighed 1 pound it proved to be a little too heavy for engine to swing properly.

The writer's good friend, Mr. Harry Edward Moyer of Lebanon, Pa., who is an expert on model aeroplanes, designed and built a 26″ diameter, 16″ pitch propellor especially for this engine. It weighs only 6 oz. and the engine spins it nicely. From what can be seen during bench tests, the propellor shows itself to be highly efficient.

While no exact speed measurements have been made, the engine spins the lighter weight propellor at about 1,200 to 1,500 R.P.M. which is about right for model airplanes.

The writer wishes to state that the tuning up of one of these engines is somewhat difficult, as such a small engine is very sensitive to the slightest adjustment. But after properly tuned up it runs very nicely provided it is not overloaded.

Four ounces of gasoline is sufficient for 30 minutes run at full speed, and ¾ to 1 oz. of oil suffices for the same. Splash lubrication is used and has proven satisfactory.

The principle over-all dimensions of engine might prove of interest.

Over-all width across rocker arms, 11¼″.

Over-all length across carburetor and propellor hub, 8″.

Height above engine bed 2½″.

The Annual Model Engineer Exhibition will be held this year in London opening on September the 17th and closing September the 25th. Any of our readers who are contemplating a trip to England this summer should certainly take in this splendid exhibition. It will be held at The Royal Horticultural Hall, Westminster, London, S.W. 1. Perhaps some of our men would like to enter Models for exhibition. Address Percival Marshall & Co., 66 Farringdon St., London E. C. 4, for full particulars.

Model Railway News, contents for June. Mr. A. R. Walkley's Portable "OO" Gauge Goods Yard. Layout, Running and Equipment. Model Railway Signalling; Junction Interlocking of Points and Signals. Light Railways as Prototypes, 0—6—0 Saddle Tank Locomotive. Construction of an "O" Gauge Model Railway. Mr. N. Evans' "OO" Gauge 12-Wheeled Pullman Car. Mr. N. Evans' "O" Gauge L. N. W. R. Model Railway. Mr. H. M. Lane's Gauge 1 Clock Work Model N. E. R. 0—4—4. Tank Locomotive. Our Mailbag. For Sale and Exchange, etc.

DRILLING HOLES AT AN ANGLE

By H. J. Coventry, M.E.

It is often required to drill holes in a definite location and angle to a circular surface, such for example as ports in a cylinder bore and while, to attempt to start the drill on the angle would be difficult if not impossible, by spending a little time in making a suitable jig the job may be done with accuracy, certainty and speed. To illustrate let us take a cylinder as sketch, Fig. 1, which has been bored and faced. It is required to drill steam ports so that the edge of the eclipse formed due to the angle shall be a known dennite dimension. Dimensions are given as illustration of the procedure, but the reader will of course apply any dimension and angle he desires.

Proceed as follows:—First lay out an accurate drawing (either on paper, or tin plate) of section of cylinder putting in the port at its proper angle and position. Draw the center line

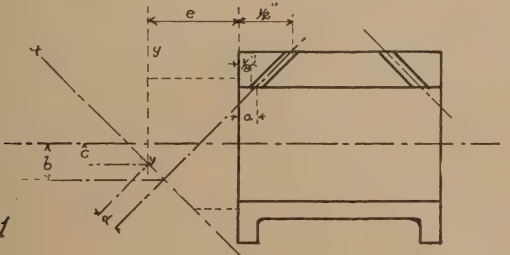


Fig 1

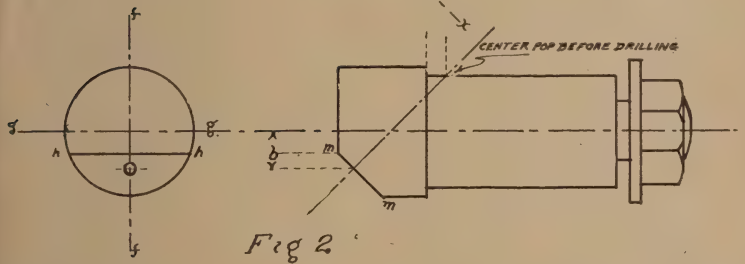


Fig 2

of port and continue it across the center line of bore. At some convenient point below center line of bore draw a line at right angles to center line of hole. xx Fig. 1. From intersection of these two lines step off a distance "d" along xx, such that it is a trifle more than half diameter of drilled hole. The amount is not important, but the

above provides the least amount of labor in making the jig. From "d" draw a line vertical to bore center line yy. Now we are ready to proceed with the jig itself. Select a piece of steel a little longer than cylinder bore and turn it down to a nice close fit in cylinder bore and turn outer end to a smaller diameter, which should be screwed for a nut and washer. Don't forget to make the body port say 1/16 shorter than bore so that the cylinder will be gripped between the shoulder at one end and the washer at other. Part off the piece slightly longer than dimension "e" measured from drawing, turn round in chuck and face off exactly to dimension "e" from shoulder. Next by means of the center square scribe a line across the diameter f.f. Fig. 2 and then with the jig lying in a V block on surface plate, scribe another line at right angle g.g. and from the line g.g. scribe another line h.h. at a distance from it equal to "c" Fig. 1.

It is as well to carry line f.f. along body by means of surface gauge and from shoulder mark off a distance equal to "a," as measured from Fig. 1. Make a center punch mark here. Now file a flat at the correct angle to face of end of jig, and continue filing till the line h.h. is met. The angle may either be maintained with the Starrett or B & S protractor or alternatively make a template of angle from the drawing. Having produced the flat satisfactorily again lay the jig in the V block and with surface gauge mark off the distance equal to b from line g.g. Turn the jig round and scribe through line f.f. part of which has been filed away. Center punch the intersection carefully, this is the center of required hole. To drill it either hold in a machine vise on drill press so that face m.m. is horizontal, or mount on tool post of lathe setting the jig so that the pop mark on body is in line with tailstock center and center pop on angle face is in line with line center. Bolt down securely, start with a Slocomb center drill and then run right through with required size drill. Do not feed too heavily and the drill should break through exactly on the dot made on body this will indicate the accuracy of your drilling.

In using the jig make the line f.f. which has been continued along the shoulder portion register with the location of hole in cylinder and in starting to drill take light cuts until the drill has got well into the metal. The more acute the angle of hole the more care must be used or a broken drill will be the result.

Such a jig can be made in almost less time than it takes to write this note and satisfaction will be obtained in having the holes exactly where wanted and moreover the edges of holes on inner and outer face will be perfectly clean.

One of our Brookline, Mass., readers writes us that besides the Ship Model Exhibit in the Old State House, Boston, which contains Col. W. F. Spier's beautiful model of "Old Ironsides," there is quite a collection of models of ships in the new home of the State Street Trust Company, Boston. The finest model in this collection is undoubtedly the reproduction of Donald McKay's last ship, "The Glory of the Seas," which, like a number of his other vessels, was destroyed by fire.

Model Engineer, principal contents for May 6, 27 and June 3, 10, 17. An Extraordinary Old Clock and Its Necessary Repairs. Practical Experiences with the Daniel Cell. A Model Steam Road Wagon. Machining the Components of a Small Power Petrol Engine. Simple Drill Jig for Screw. Clock Electrical Control Apparatus. A Column of Live Steam. The Auto-Heat Gas Blow Pipe. Model Yachting Notes and News. An Articulated Steel Rail Motor Coach. A Southern Railway 4—4—0 Maunsell Locomotive. Making Press Tools. Small Water Power Electric Lighting Installations. Keeping an Aquarium in Working Order. In the Glow of the Forge. A Petrol Motor for Model Power Boats. 1¼" Bore by 1 5/16" Stroke, Weight 3 lbs. 9 ozs. Complete. Atmospheric Electricity. Making Primitive Objective Lenses for the Microscope. Fitting New Valves and Guides to an Old Gas Engine. Electrical Condensers. Recent Inventions. Air Transport. Model Yachting in Natal. Some Notes on Cutting Speeds for Various Metals, Valve Timing for Locomotives. An American Model Steam Traction Engine. Model Yachting Association Notes and News.

Mr. Frank Birch of Highland Park, Detroit, Mich., has recently placed on the market some four wheeled and some six wheeled trucks for passenger and freight cars. Any of our readers interested in this work should get in touch with Mr. Birch and let him know that you are interested in this subject. You may be able to do some business together to your mutual advantage.

Mr. Louis Marey has been interested in the construction of models for a number of years. He has built quite an assortment: a battle ship 52" long; a destroyer ¼" to 1'; a clock model with a procession of saints at certain periods of time, etc. His latest desire is to construct a Mallet type locomotive. He would like to get in correspondence with any of our readers who have built one of these locos, or is contemplating the construction of such a working model.

Mr. Vincent V. Hubbard, R. F. D. No. 1, East Alton, N. H. is looking for some information on the construction of a 2¼" gauge electric locomotive. He would be pleased to hear from any of our readers who could give him a little information on this subject.

Mr. H. Jaffers, Saginaw, Mich. is interested in model steam engines. He would like to hear from any model fans in his district with a view to an occasional meeting. These little friendly gatherings are doing much to increase the interest in model work not only amongst old timers, but amongst the ever increasing number of new men who are mechanically inclined and who would like to get into the game.

When you have finished your Model send us a photograph with a short description of its construction and general particulars. We shall always be glad to receive such notices because what has interested you will also interest our readers.

THE CHICAGO SOCIETY OF MODEL ENGINEERS

Chicago, Ill.

The Modelmaker,

Dear Sirs:

The C. S. M. E. is holding its meetings regularly in room 921, Kimball Hall, Chicago on the second and fourth Thursdays of each month. Anyone interested in a visit to the Society will be cordially welcomed.

On Saturday, June 5th, the members inspected the Crawford Avenue Electric Plant of the Commonwealth Edison Co.

We held our annual informal picnic to Dunes Park on Sunday, June 20th, and a good time was enjoyed by all.

For our next trip we are planning to inspect one of the steel mills near Chicago.

With many good wishes for the Modelmaker and model engineering in general, I remain,

A. WILLARD,
905 Linden Ave.,
Wilmette, Ill.

BOOK REVIEWS

Metal Plate Work by C. T. Millis, Fifth Edition revised and enlarged viii, 503 pages, 312 illustrations, 7½" x 5¼", $3.00.

This is the fifteenth printing of this well known work which fully covers the subject of laying out patterns to all kinds of metal work including many unusual forms of patterns for the use of tin, iron and zinc plate workers. coppersmiths, boilermakers, plumbers and engineering students. The Geometric system used is acknowledged to be after years of application the best system for laying out this kind of work.

Mr. George W. Daniels, 98 Craig Avenue, Freeport, Long Island, N. Y. has been very much interested in the building of models for a number of years, especially machines and steam engines. He would very much like to get in touch with any of our subscribers within easy reach of his home with a view to an occasional meeting, and if there are enough men in his district interested in this delightful pastime it would be an excellent opportunity for them to organize a small Model Engineers Club.

Mr. David L. Stine, 233 Scottwood Ave., Toledo, Ohio has been interested in model making for sometime. He would like to hear from any of our readers, residing near his city with the object of having an occasional gathering of gentlemen interested in this subject, with a view to the formation of a Model Engineers Society. We hope he will hear from a good many of our readers.

Another of our readers has sent us the addresses of the following places where some fine ship models may be seen. The Marine Room of the Old State House, Washington Street, Boston. The Old Dartmouth Museum of New Bedford, which has a half size model of a Whaler, 50 feet long on deck, 85 feet from end of bowsprit to the end of spanker boom and 45 feet to top of mast. It is complete in every detail and is so arranged that you can walk all around it, go on board, and go down into the after cabin. The Commercial Museum in Philadelphia have also a number of models of ships.

In the May issue of the Modelmaker a reference was made to the Model Locomotive competition. The closing date was given as June 1. This has been extended to September 30. The Silver Cup has been donated by Mr. H. O. Havemeyer, Jr. The competition is open to members of the N. Y. S. M. E. Full particulars can be obtained from Mr. A. A. Singer, Sec'y, 15 Moore Street, New York, N. Y.

Abraham & Straus of Brooklyn are featuring an exhibition of Model Boats including some very fine exhibition Models, one of a war ship, a steam yacht and a schooner yacht, also a few model power boats and a number of fine Sailing Yachts and small boats. They also show a case of silver cups, which this firm have donated for prizes to be raced for on September 11th, on the lake in Prospect Park, under the Management of the Prospect Park Model Yacht Club.

The following races are open to all comers:

1st race—For Models 30" or longer over all.

2nd race—For models 20" to 29" over all.

3rd race—For Models under 20" over all.

Sailing Races for members' Boats.

1st Race—Handicap, open to all large boats including "B" Class, course windward, and return, twice around the course.

2nd Race—"C" Class, triangular course, once around.

3rd Race—For Junior Members, course windward and return once around.

This series of races should prove very attractive to the Model Sail Boat owners and the handsome silver cups are certainly worth competing for.

For full particulars write the Secretary, Prospect Park Model Yacht Club, Prospect Park, Brooklyn, New York.

The last meeting of the New York Society of Model Engineers was a very interesting one. There were twenty-four members present. Any of our readers who are not already members should enter their name for membership. The dues are only $2.00 per annum. There are two competitions open for members. A silver cup will be presented to the winner of each—a Locomotive competition and a Model Power Boat competition. The Secretary, Mr. A. A. Singer, 15 Moore Street, New York, shall be very glad to give full particulars.

Mr. Earle M. French, 110 Monatiquot Avenue, Braintree, Mass., is very much interested in Modelmaking. He would like to get in touch with any Modelmakers residing in or near Boston with a view to a get-together meeting in the hope that he can find enough enthusiasts to form a Model Engineers' Club.

We have frequently been asked for good drawings of an "O" gauge locomotive. Mr. A. A. Singer informs us he has a set of three large scale drawings to detail of a Pacific Steam Locomotive "O" gauge, and another drawing to make the model electrically driven instead of using steam. The steam type loco, but electrically driven, seems to be a very popular model.

When writing for information please enclose stamped and addressed envelope for reply.

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Four Blue Prints. Model British S. E. 5, A. single-seater fighter, full details. Write O. Schuwendt, 1046 Blackstone Avenue, Fresno, Calif.

Learn to be an Aviator buy your glider parts from Icken, 903 Ray Ave., Ridgefield, N. J.

Blue Prints of Ships for Modelmakers, send for circular, G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

Railway Centenary — 1825-1925, being an exceedingly interesting historical account of the British Locomotive, cars and signalling apparatus during a hundred years of development, with many illustrations and some larger colored plates, 124 pages, 11 x 8½" paper binding, $1.60 postpaid. Spon, 120 Liberty Street, New York.

Designing — Working drawings prepared; calculation of strength of materials; for your models or actual size; inventor's ideas developed. E. H. Grafton, 6542 Lincoln Ave., Detroit, Mich.

Locomotive Blue Prints—"O" gauge Pacific. 3 sheets, steam, full details, $2.00. 1 sheet, steam-electric, 75 cents. Singer, 15 Moore St., New York.

Patrick 4 In. Swing Lathe, slide rest, back gear, drilling machine, countershaft, grinder, 1/6 H. P. A. C. motor, 2 vices, 42 copies Model Engineer to date, Locomotive Cyclopedia, Greenley's Model Steam Locomotives, Smith's Advanced machine work, Hayward's ignition starting and lighting. First $35.00 gets lot. Carter, 224 S. Seventh St., Olean, N. Y.

WANTED

Models, Railways and Locomotives, back nos. and Vols. in good condition. Box 10, Modelmaker.

Drummond 4 In. Screw Cutting Bench Lathe—Second hand, in good condition. Grafton McInnish, P. O. Box 516, Plainview, Texas.

WORK WANTED

I make patterns, small castings and working models. Modelmaking is my trade. James Koch, 103 Summit Ave., Linwood, Pa.

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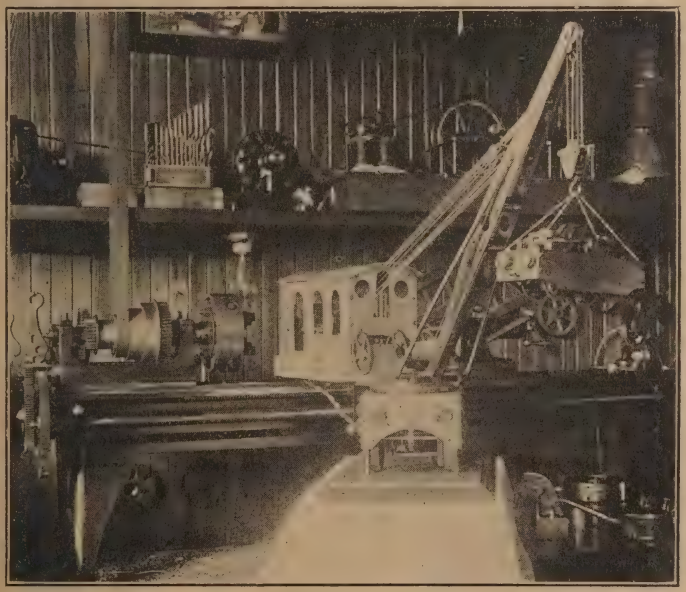

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SPON & CHAMBERLAIN, 120 Liberty St., New York

THE MODELMAKER

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OUR FOREWORD

On another page of this issue will be found a letter from one of our readers asking for the speeds attained by the fastest Model Power Boat in the U. S.

We would be glad to hear from any of our readers who have actually witnessed such performances. There have been some rather absurd claims made to the speeds of certain model power boats, but to the best of our knowledge no official speed results have ever been published. Except in the case of the model power boat competition at Put-in-Bay in the Fall of 1924 which was run under the management of the officers of The Detroit Model Yacht Club. These official results were published in the September 1924 issue of the Modelmaker. Faster time could have been made at this particular race if there had not been such a strong wind and rough water. In the January, 1925, issue of the Modelmaker is a description of an 8 cylinder uniflow model marine engine built for a 6 ft. metal model boat. It had a very powerful blow torch and large steel boiler which supplied the engine with an abundance of steam at 200 lb. pressure. It was claimed for this boat that it did 25 miles per hour, but we are not aware that any official time keeper was present at the test. Though it is quite possible with such a powerful installation this speed was attained if not even greater speed.

No doubt many of our readers would like to see this particular boat thoroughly tried out.

The most satisfactory way would be to use the pole and 100 ft. steel wire and run the boat in continuous circles as long as the steam would permit. This would enable a competent man with a stop watch to record the actual time consumed on one, two, or more, complete circles also on the complete run. It would then be an easy matter to compute the correct distances covered in a given time. That would officially establish the actual performances of this particular boat. We believe this boat was of the deep keel type with a single propellor. With such a plant in a hydroplane or sea sled type of hull the speeds obtained might be quite surprising. The size and shape of the propellor would have to be carefully considered to get the best results.

Model Engineer, principal contents, June 24, July 1, 8, 15 and 22. A ½" Scale Model Express Locomotive 4—6—0. Gauge Ring for Boring. "L. B. S. C." Building Locomotive Tenders. A Precision Plane. A Model Jet-Condensing Table Engine. Building a Half Horse "Hartop" Gas Engine. A Small Scale Cattle Steamer. A Cone Grinding Accessory. "L. B. S. C." Gauge "O" Pacific Boiler. Model of a Man-of-War of about 1750. Boat Building and Sailing in South Africa. Private Workshops. Instructional Model of Walschaerts Valve Gear. A Model 90 Twin Petrol Engine 1½" Bore 1½" Stroke. Making Small Steam Cocks and Valves. Stamping Fixtures for Small Jobs. High Tension Battery Charger. A Stationery Steam Engine With Some Novel Features. Ejector or Steam Jet Pumps. Acetylene Welding with Small Shop. Machining a Split Bush. Recent Inventions. Queries and Replies. Light Machinery. Yachting Notes. Society and Club Doings.

BOOK NOTICES

Diesel Engines, Marine; Locomotive; Stationary, by David Louis Jones. xvii+565 pages, 341 illustrations, 9½x6¼ in., cloth, price $5.00.

A practical treatise on the principle, construction, operation and maintenance of the Diesel Oil Engine, both Marine and Stationary types, with a descriptive chapter on the latest developments in Diesel Locomotives and Diesel electric drive for ship propulsion. Contents of Chapters: 1, Elementary Thermodynamics. 2, Elementary Principles. 3, Comparative Efficiencies. 4, Details of Construction. 5, Spray Valves. 6, Fuel Pumps; Governors; Fuel Systems. 7, Valve Gears; Starting and Reversing Systems. 8, Lubricating and Circulating Water Systems. 9, Indicator Cards and Engine Testing. 10, Operation of Diesel Engines. 11, Representative Types of Engines. 12, A 1,000 Horse Power Submarine Diesel Engine. 13, Diesel-Electric Drive for Ships. 14, Properties of Lubricating and Fuel Oils. 15, Marine Rules for Vessels Propelled by Diesel-Oil Engines. 16, Two Hundred Diesel Engine Pointers. 17, Diesel Engines for Railroad Service. The Author has gathered within the covers of this book a great deal of information that should prove of value to all those interested in this subject. The chapters on Marine Diesel Electric Drive and on Diesel Electric Locomotives are of especial interest at this time.

Economics of Highway Engineering by Lt.-Col. H. T. Tudsbery, M.C., R.E. (T.), 48 pages, 9 in. x 5¾ in., cloth. $2.00.

Arranged under the following headings. Introduction: Traffic: Track: Vehicles: Fundamental Principles: and Index.

F. H. S.—It is not a difficult operation to make a bellows and blow torch suitable for brazing or silver soldering. In Thatcher's little book on Simple Soldering is a chapter that fully describes the construction of such a piece of apparatus.

When writing for information please enclose stamped and addressed envelope for reply.

A ¾" SCALE MODEL LOCOMOTIVE

By PAUL REITHMAIER

Member of the Chicago Society of Model Engineers

I have just about completed this model, and a short description of it might be of interest to the locomotive man. The engine is of the 2—8—2, or Mikado type and is a free lance design. The reason I built a freight engine, will explain itself this way. I have built several Passenger Engines, but on account of limited space for track I could never develop the full speed of those engines, so I built this engine with small wheels to get a better run on my short length of track. I also reduced the revolutions by increased piston travel, that means using a long stroke and a small cylinder bore. I am a firm believer in a long piston stroke, as a model locomotive always has a tendency to run too fast. The long stroke gives a quick get away and greater starting power for the engine.

Now to come to the construction of the engine. No drawings were made, with the exception of a diagram for the Valve Gear. I am one of those fellows who have the gift to design things and get them to right proportions while they are being made. I am a mechanic by trade and have made the steam locomotive a life study, beginning in my early boyhood.

The Driving wheel pattern was taken in hand first, and consists of a center, drilled and filed out, of a ⅜" brass plate; the rim was made from an old locomotive brass wheel and is shrunk and soldered on. The trailing wheel is also a brass pattern. The front wheels are Basset-Lowke castings.

The cylinder pattern, including the steam chest, is made interchangeable, so it could be used for either piston or slide valve. These are all the patterns required. The rest of the parts such as smoke stack, driving journals, etc., were made out of drawn brass stock.

The main frames are made from two pieces 5/16" by 2" cold drawn steel. This job requires quite a bit of drilling, sawing and filing. Great care has been taken to get the pedestals nice and square, and correctly centered.

After mounting the driving wheels, it was found they were centered so good that it was possible to interchange the front and rear axle coupling rods without any difficulty.

The front Truck is of the radial type with swing link centering devise. The trailing Truck is also a radial type, and has a wedge shaped centering devise. Both trucks are sprung with spiral springs.

The main drivers have regular leaf springs and are equalized. Nearly all the weight of the engine is on the drivers and there is just sufficient weight on the front and rear truck to keep them on the track.

The cylinders are cast in gun-metal and are without the saddle, common to American practice. The reason for that is to keep down the condensing of the steam. They are also for the same reason made as light and as thin as possible.

The pistons are made in two parts held together with the piston rod and a lock nut on the end. A piston ring 3/16″ wide provides for steam tightness. For an experiment I provided this engine with slide valves. On other engines I have used piston valves made of nickel working in brass liners and have had very good results with them. The valve travel is ½″ in full gear and will cut off on ¾″ stroke. A relief valve and displacement lubricator are arranged for each cylinder.

The Walschaert valve gear is very simple in construction, and resembles very much the Maffei type engines of the Bavarian railroads. The links work only on one pin of ¼″ diam. and turn in an extra long bearing. Reversing is operated from a quadrant lever in the cab, which has three notches for each direction of run, and one center position. The engine works very good linked up to the last notch.

The Boiler

The boiler barrel, including the smoke box is made from copper tubing 22½″ long by 5½″ outside diam. and ⅛″ wall. The outer fire box is a 3/32″ thick sheet bent around the barrel, and fastened to it with a double row of rivets. Throat back and smoke box plate are also flanged out of 3/32″ copper sheet, but are only single riveted. The rivets used are 5/32″ diam. and 7/16″ spaced apart. The flue and back plate of the inner fire box are ⅛″ thick. The crown and sides form a single sheet 3/32″ thick. The crown sheet is well supported and anchored. The four sides are braced with ¼″ diam. stays of copper, 1⅛″ apart. Nine ⅝″ and five ¾″ flues of 17″ in length are screwed in one end and expanded in the other end. Two 5/16″ brass stays connect the fire box back and smoke box plate together. A steam pipe in center, which contains the

throttle valve rod serves also as a stay. The same pipe has a short connection to the dome, and extends into the smoke box, where the throttle valve is screwed on. The throttle valve itself is on the order of an engine slide valve, with omission of the exhaust and one inlet port.

All joints are soft soldered with exception of the inner fire box, which is silver soldered.

A superheater has not been made yet, but the five larger flues will provide for one. The boiler is lagged with Russian sheet iron, and is bolted onto a built-up cylinder saddle in front and rests in back on a vertical sheet, which allows a little radial movement.

The grate is of the round bar type, but will be replaced by a shaking grate. The ashpan has two pockets between the frames and two are built around the truck wheels one on each side.

Fittings of the boiler are two safety valves of ¼" capacity, water gauge, steam gauge, blower valve and a steam valve for the injector. The injector is built to the description of (L. B. S. C.) in a column of "Live Steam" in the Model Engineer, and sure works good. The whistle is mounted on top of the boiler, to get as short a steam connection as possible. There are two check valves.

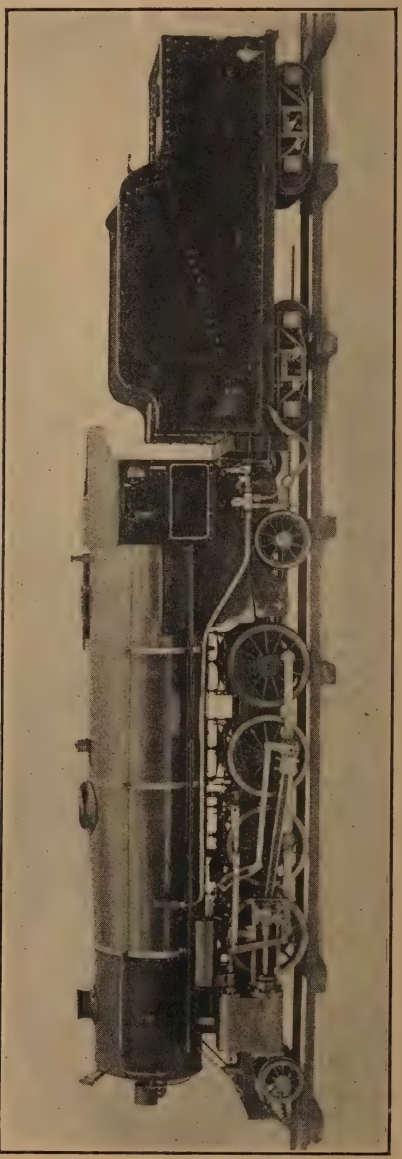
A powerful hand pump is mounted in the tender. The fire door is of the butterfly type, and will be arranged later to work automatically.

The Tender

The tender truck frames are of the diamond type, built up of cold drawn steel and have cast bronze axle boxes. Spiral springs are provided. The under frame is made of ⅜" by ¾" cold drawn steel and has two bumpers to bear against the engine, which gives a stiff and still flexible coupling to the engine. The tank is of galvanized iron sheet, correctly riveted and soldered.

The engine is equipped with pilot, bell and electric head light. I am still experimenting with a small Turbo generator about 1" diam. which will be sufficient to light two 1½ volt lamps. A sand dome will be placed between smoke stack and steam dome, and another dome behind the safety valve.

The engine was run several times, but no actual test has been made yet. As designed I expected to get 25 lbs. draw-bar pull, but on a temporary test, she pushed the scale to 30 lbs. The steam pressure used was 100 lbs.



Fuel used was soft coal, but trouble was experienced with plugged flues, so I changed to hard coal with very good results.

Of course my tracks are not very good and only about 100 feet in length, which is hardly sufficient to get up speed.

Brakes are badly needed and it will be my next job to equip the engine and tender, with steam brakes.

Principal Dimensions

Length of engine and tender	53¾ inches
Length of engine only	32¾ "
Length of tender	20¾ "
Height of engine to top of smoke stack	11¼ "
Gauge	3½ "
Weight of engine only in working order	112 lbs.
Weight on drivers	94 "
Weight on front truck	8 "
Weight on rear truck	10 "
Diam. of drivers	4⅛ inches
Diam. of front wheels	2 3/16 "
Diam. of rear wheels	2¾ "
Engine wheel base	26⅞ "
Total heating surface	481.8 sq. in.
Grate area	30⅜ " "
Cylinder bore	1⅛ inches
Stroke	2 "

Tender

Tender, tank capacity	2¼ gallons
Tender, wheels diam.	2 3/16 inches
Tender, weight empty	20¼ lbs.

Mr. William Owsley, 1301 Chickasha Avenue, Chickasha, Okla., writes us that he is just completing a Model 24 racing yacht designed by Mr. A. R. Ferris, which was described in February 1926 issue of the Modelmaker. He says it makes up into a wonderful little model. We shall be glad to hear from any of our readers who have made Models themselves from designs given in the Modelmaker.

We have just received a letter from another of our readers giving us the following addresses where models of old-time ships may be seen: Max Williams Antique Shop, 583 Madison Avenue, New York; India House, Hanover Square and Pearl Street, New York, and the Museum of the City of New York in the old Gracie Mansion at the foot of 88th Street, opposite Welfare Island, East River, New York.

A MODEL ELECTRIC LOCOMOTIVE CRANE

By C. HARRY SQUIER

The truck on which the crane is mounted is of a size 5″ x 12″ built of ⅛″ brass plate for the top and sides and ¼″ plate for the ends. The wheels are of brass, 3¼″ in dia. with a ½″ tread, forced on ½″ diameter shaft axles made of drill rod steel. Solid brass bearing blocks are set in the side plates, and the whole construction is extremely heavy, and the truck able to carry a one hundred pound load without trouble.

The truck motor is 6-volt, Series wound Knapp type supported between the two axles, and driving them through 48 pitch spur gearing at a ratio of 96 to one. Geared thus, the motor can move the truck at slow speed with any load the crane can handle. This motor is controlled by a separate switch in the base of the cab.

The wheels of the truck were originally flanged for track operation, but due to the crane being used so much off the rails, the flanges were removed to prevent cutting the floors, and to give it a wider range of action.

The foundation plate of the crane is a circular brass casting 5″ in diameter by 5/16″ thick, bored out to give a bearing surface ⅜″ wide at the outer rim. A ⅜″ King bolt in the center, with spring collar and lock-nut, anchors it securely to the truck and permits free rotation.

The main frame is a brass casting. Accurately machined all over and screwed by screws to the foundation plate. A boss being cast integral with the frame for the boom to receive a good anchorage. The bearings for the cable drum, and intermediate gears are all carried on this frame and are adjustable for wear. All gears are of brass 32 pitch of involute form, the ratio from motor shaft to cable drum being 132 to one, thereby multiplying the power enormously and providing ample power at the hook.

The boom is of 1/16″ sheet brass, 20″ long, built up similar to a bridge truss, and is of great strength, showing no signs of bending when 40 lbs. is swinging from the hook. Two sheaves 1″ in diameter are used at the boom head, and two at the hook, making the total lifting ratio to motor shaft over one thousand to one. This ratio gives a lifting speed of about 5 feet per minute with the controller at full speed. The heaviest load is under perfect control at all positions and can raise, or lower, a distance of 1/64″, or less, without effort. The writer does not know the ulti-

mate lifting capacity of this model but the linen cable is the weakest link, and in case of an accident where the hook starts to pick up the bench instead of the load, it readily snaps before stalling the motor.

The original motor was operated with alternating current at 100 volts and reversing switch but due to insulation troubles this was removed, and a small separately excited 6 volt D. C. motor was substituted, enabling the truck and crane motors to both draw current from the same bus bars using a push button controller, the lower voltage avoids all arcing troubles, and also prevents the operator getting shocks through his fingers within the narrow confines of the cab.

The cab is built up of ⅛" plate aluminum with brass gussets, of a size 10" long by 6" high. A solid cast iron roof faced with aluminium, acts as a counterweight for the boom load. To further increase its stability, massive blocks of steel are secured to, and made part of the cab floor, the whole machine weighing in the neighborhood of forty pounds. The cab is illuminated by a small six-volt lamp fastened to the roof.

The boom has a movement of 360 degrees and is raised, or lowered, by a small winch within the cab operating through 4 sheave pulley blocks. A load can be placed in an exact spot anywhere within range of the boom, and can be handled as delicately and with an ease to compare very favorably with the most modern type of locomotive crane. All power is furnished by a standard 6-volt accumulator, the maximum current required being about 8 amperes.

Mr. A. A. Singer informs us that owing to the difficulty of getting small hex nuts and bolts he has made up quite an assortment of small sizes to standard American gauge. These little items are very essential and add considerably to the finish of a good model.

Mr. Reggie Pink, 2831 Middletown Road, Bronx, New York, is considering the construction of a 7¼" Gauge Locomotive and Track with cars. He would very much like to hear from any of our readers who have done work along this line as suggestions for type of locomotive.

Model Railway News, contents for August. An "O" Gauge Outdoor System. A New Zealand Exhibition Model Railway. Running "O" Gauge Clockwork Trains. A Simple Culvert Bridge. Construction of an "O" Gauge Model Railway. A "Keen-Farrow" Type Water Tank. Automatic Model Signalling. "O" Gauge Garden Railway Tips. Model "O" Gauge 4—6—4 Type Electric Locomotive. Small Railways as Prototypes. Gauge "O" Track Layout. Mr. G. P. Arthur's American Type Model Railway. Our Mailbag. Club Notes etc.

The Modelmaker.

Dear Sirs:

In reply to your question about silver soldering. I bought a book describing the methods used, but could not make headway owing to having only a one-pint blow torch as source of heat, and of course this would not even start to heat a boiler twelve inches long to the red heat necessary to fuse the silver. Finally I fixed the boiler up on the household gas stove directly over the largest burner, then arranged tin baffles over the boiler to direct the gas flames on to it. I then lit the jet and in fifteen minutes the boiler was at a dull red heat, and after applying borax and silver in the usual way turned the blow torch on the particular part I wished to solder and this provided the necessary extra heat to fuse the silver.

Of course it is necessary to rearrange the boiler and baffles for each seam. The thin flues were protected from burning by slipping iron rods into them, leaving half an inch or so projecting. The first boiler I made was ruined by these rods sticking in the flues, and in attempting to get them out, buckling the flues. I imagine it was excess borax which caused them to stick. However, in later attempts I selected rods at least 1/16″ less in dia. than the bore of the flues and had another rod to hand so that the instant the brazing was completed I pushed the rods out of the flues, before the borax had time to set.

In silver soldering two parts, one of which is much larger than the other, it is necessary to direct all the heat on the large part to get it to the fusing point of silver, before playing the flame on the actual joint, otherwise, if the flame is first played on the joint, the small part will just melt before the large one gets nearly hot enough.

It is not possible to silver solder some grades of phosphor bronze as this alloy generally melts, or rather crumbles up, before the silver melts. In a case where the worker has decided to silver solder bronze and take a chance, I suggest taking a scrap piece of the bronze and a piece of silver and heat the two of them together to discover which melts first. If the silver melts first one may reasonably take a chance, but watch the job very closely and the instant the silver melts turn the flame away.

I hope these notes will prove to be some assistance to readers. I am not an expert, by any means, but the little I do know has been learned in the expensive school of personal experience.

Yours truly,
F. G. Carter.
224 S. Seventh St., Olean, N. Y.

The Editor
The Modelmaker.

Dear Sir:—

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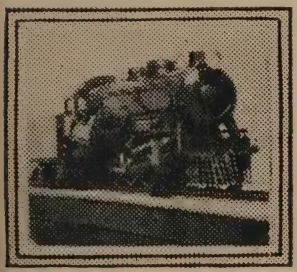

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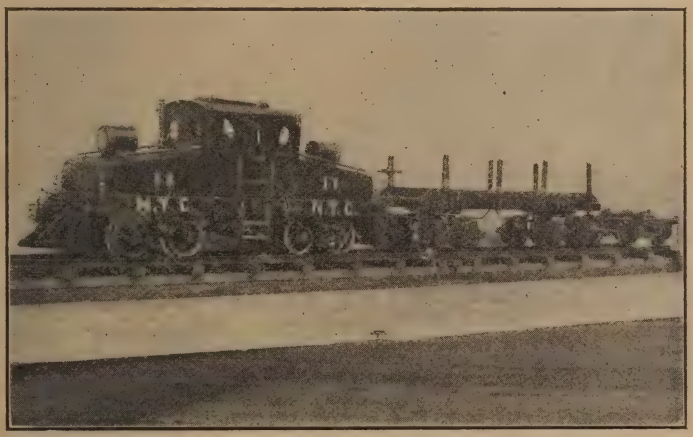

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See Model Maker, Feb. to May 1925 for description.

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OUR FOREWORD

Last year a very interesting book was published in England showing the development of the Steam Rail Locomotive during the past hundred years. From the crude products of Stevenson and Watt to the powerful passenger and freight locomotives of the present day.

About 20 years ago some designers and builders of locomotives turned their attention to a new type, the Gasoline-Electric Rail Car, which included the motive power, passenger and baggage compartments complete in one unit. A number of these rail cars have been built and have proved quite successful and economical on lines where traffic was light.

In 1909 a more important advance was made in Russia, where a complete design was worked out for a Diesel-Electric Locomotive, but the actual locomotive was not built.

In 1913 one of this type of locomotive was built in Sweden and proved quite a success. Since that time Diesel-electric locomotives have been built in Russia, Sweden, Hungary, Germany, France, England and the U. S.

In the past ten years much experimental and development work has been undertaken and today this type, or types, because there are many different designs, have been brought to the point where they are considered a commercial success.

Locomotive builders have realized that in spite of the enormous increase in size, weight, boiler capacity, heating surface valve mechanism, and hauling power of the modern steam locomotive, they have not been able to increase its speed to any appreciable extent. When it is recalled that the Flying Dutchman of 50 years ago was able to maintain speeds of 60 miles an hour hauling a fair sized string of passenger cars.

This question naturally comes to these men, "Has the reciprocating steam locomotive reached its maximum speed?"

Much has been accomplished in the development of the electric locomotive as a prime mover and higher speeds have been attained, but the investment for the initial equipment of the power plants, installation of the third rail, or overhead feeder and upkeep make the cost almost prohibtive for long hauls.

In thickly populated districts, where traffic is heavy and almost continuous, the earnings are great enough to warrant the initial cost of installation and upkeep. But for long hours where passenger and freight

trains are comparatively few, it is doubtful if the change from the steam locomotive to electric would be a profitable speculation.

There are three elements which must also be considered, Storms, floods and deep snow, which may cause great damage to installation and partial, or complete, stoppage of service for hours, or even days.

There is a great field for the Diesel-Electric Locomotive. The initial cost for the Diesel-electric power unit would be about the same when quantity production has been obtained, as for a modern high power steam locomotive, but its advocates claim a higher efficiency and less cost for fuel, and that when the run is finished and power shut down no fuel is consumed, until it is again in operation and storms, floods or snow would have no more effect upon its operation than they would have upon the steam locomotive. In fact both of these latter types of prime movers would be able to operate where electric locomotive would be at a standstill.

There is a very interesting illustrated article on Diesel-Electric Locomotive in the August, 1926 number of Railway and Locomotive Engineering which we recommend our readers who are interested in the construction of model locomotives to read.

If any of you are contemplating the construction of a locomotive model why not build one of the Diesel-Electric Type?

The writer believes that in a few years we shall see the Diesel-Electric prime mover replacing the ponderous steam locomotive on many of our fast passenger long distance runs.

We shall be glad to hear from any of our readers on this subject.

A suggestion has been made in the New York Herald Tribune that the Park Board give permission for the old reservoir in Central Park to be used by model boat builders to race and test out their boats, as the present small boat pond in the Park is quite inadequate for this purpose. This would make an ideal model boat lake provided the authorities filled it in up to about 3 ft. of its high water mark. To use it as it is would be very dangerous owing to the depth of the water. To drain it down to a depth of 3 ft. would make it useless for a sailing lake, as it would then be a lake in a deep hollow. The requirements of an ideal sailing lake is comparatively shallow water, with the surface of the water as near the level of the surrounding ground as possible, and free from obstructions like buildings or heavy trees, which prevent a good steady breeze necessary for a successful regatta. Perhaps some of our influential Engineer friends interested in the development of this delightful pastime will work out some plan to lay before our City government. We wish them good luck and hope something can be done to make this useless body of water of some value to our community.

When writing for information please enclose stamped and addressed envelope for reply.

ELECTRIC LOCOMOTIVE

By MR. J. W. NEPTUNE

Member of The Akron Society of Model Engineers

I made this Model about 14 years ago when the Electric Locomotive was in its infancy. I realize it must look like an old timer when compared with the electric locomotive of today, but I considered it a fine Model when it was finished. It worked very well indeed considering the fact that it only had one small motor and little power. My model was designed from the 0—4—4—0 Electric Locomotive built by the Baldwin and Westinghouse Companies for the B. & O. and N. Y. C. R. R. The weight of these locomotives was about 160,000 lbs. They were used in the N. Y. C. R. R. yards at New York. The original data I worked from has been destroyed, but I give the following particulars from memory.

Gauge, 2 inches.
Scale, 7/16″ excepting the head lights and whistle.
Motor, 6-8 Volts, 0-¾ amps.
Wheels, 1¾″, size over flange 1⅝″.
Journals have spiral springs.
Motor was geared to both sets of wheels.
Source of power, storage batteries.
Body of locomoive, built of wood and covered with sheet tin.
Length over bumpers, 12″.
Width, 3¾″.
Height to top of cab, 6 11/16″.
Weight about 7 lbs.
The locomotive was weighted down with strips of lead.
Trucks, motor and pilot were made by the Voltamp Electric Co.
Brass Brads were used for rivets.

Mica was used for the windows in the cab. The roof of the cab was moveable to enable me to work the starting and reversing lever.

Each head light was fitted with an electric light bulb also one electric light bulb in the cab working off a selecting switch.

I had about 100 feet of tin plate track with the third rail fixed to the ends of the ties outside of the running rails. This track was fastened to a shelf attached to the wall around the basement of my house.

Besides the locomotive I had two flat cars and a Caboose.

The Locomotive with the two flat cars, weighted with about 10 lbs. of iron and the Caboose developed a speed of about 160 feet per minute.

I am now working upon a modern type of electric locomotive, one pair of trucks are shown in the illustration attached to the rear of the flat car.

THE SANTA MARIA

One of the foreign exhibits at the Sesqui-Centennial Exposition that has attracted considerable attention is a very fine model of The Santa Maria made by Models & Mascots Syndicate.

The Model is built to a scale of 7/32".

Length, 1' 9¾" O. A.

Length between perpendiculars, 1' 4¾".

Hull is of satin walnut planks, 1/32" thick.

Wales are rivetted on vertically to the timbers.

Masts, fore, main, and mizzen, the main mast is bound with rope to strengthen it.

Sails, foresail, mainsail, maintopsail, mizzen, lanteen and spritsail.

The Papal Cross is on mainsail, the Maltese Cross on foresail.

About 5,800 brass rivets, size 15/1000, length varies ⅛" to ½" were used in its construction, the rivets were staggered to make them hold more securely.

Deck planks are rivetted.

About 150 blocks and deadeyes made of ebonite were used.

Rigging is of fine copper wire, nearly 1 mile of this wire was used for this work.

Sails are of sterling silver beaten to shape.

One small boat in waste.

Windlass, bars on outer drums.

Anchors of solid copper, in two pieces, bound and rivetted with copper.

The rudder is connected to a tiller which is operated by a whipshaft.

Steering light, a basket shaped lantern carried over stern rail.

Painted scrolls and plaques placed around both quarters for decorative purposes.

The sea upon which the model rests is cast silver and metal.

Mr. J. W. C. Corbusier, Hudson, Ohio has sent us three photos of his latest work. A fine model of Donald McKay's famous Clipper Ship "The Flying Cloud." A ship that made the fastest time from New York to San Francisco during the great gold fever in California. This is more than a model, it is a miniature, because it is seaworthy and sails well in a fair breeze. The hull is 26½" L.W.L. and the rest in proportion according to drawings. Mr. Corbusier's next effort will be a scale model of another of Donald McKay's famous ships "The Great Republic," which was claimed to be the largest clipper ship ever built. The Model will be 42" L.W.L. This gentleman also built a fine working model of the "S.S. Aquitania" which was described in the Modelmaker for November, 1925.

A CHINESE JUNK

Model by G. B. Douglas

Last spring there arrived in New York a Chinese junk that had been built in Amoy and reached New York via Vancouver and the Panama Canal. As this was the first junk that had been here in about 60 years I was much interested in visiting her and noting the, to me, strange ideas in use on the vessel.

I determined to add to my list the lines of a junk which I found in a book that I had and afterward built the model shown in the cut from these lines.

The construction was so different and the ideas so peculiar that I became much interested in working out the drawing.

The original junk was 89 ft. over all, 69 ft. on water line, 20 ft. 9 in. beam and 4 ft. draught. At ¼ in. scale this worked out a model 22 in. over all.

The hull was made of a block of white pine and dug out to ¼ in. thick for lightness. The deck

was fitted on and the long side rail was made of ⅛ in. white holly and bent to shape and fastened to the side of the rail. The small perpendicular strips on the rail and in the overhanging sides at the stern were made from matches glued in place. The long strips were from strips bought from a dealer in aeroplane supplies. The sails are of pongee silk and the battans on them are of rattan.

Aft of the movable rudder post the interior of the boat is all open as there is an opening in the stern through which the rudder can be hoisted by a windlass on deck when the boat goes into shallow water. There is a watertight thwart ship bulkhead inside to prevent the water entering the main hold of the boat. The idea is that the weight of the water slowly drains out when running in a following sea and prevents the vessel from pitch-poling, or standing on her bed. The rudder is large and framed of planks between horizontal bottons in which holes are cut diamond shape to lighten the rudder. The rudder is large and these holes make it easier for the helmsman, or more often a woman, to put the helm over.

In stepping the masts they put in two perpendicular planks and cut down the foot of the mast to a wedge shape and put it down between the planks. The heavier the mast the tighter it jams in between the planks. The fore and main masts never go to the bottom of the vessel and set in mortised blocks as is common practice elsewhere.

The mizzen or last mast is 2 feet off the centre line of the boat and on the junk from Amoy it was out on the starboard rail so as to be out of the way of the long tiller. The sails and anchors are raised by windlasses of logs with cross sticks and are at the foot of the masts.

The anchor is made of a heavy wood that sinks, has but one fluke and the stock or crossbar is placed just above the fluke.

The cooking is done in two kettles over fires on iron or concrete plates on the after deck and the overhanging box shopped affairs are used for storage of kitchen supplies.

Every junk has an eye painted on the bow for a Chinaman says, "Boat have no eye, how can see —no can see, how can go." The flag at the formast on a bamboo rod is red. At the main is a wind gauge and at the mizzen the new Chinese flag.

Some Chinese junks are fast sailers, much faster than any one would think to look at them. The Amoy junk was sailing on Long Island Sound doing 10 knots and standing up, as the saying is "like a church." A yacht came along and was lying down with her rail in the water trying to keep up with her.

Mr. Edgar L. Brown, care of Schiffman Jewelry Co., Greensboro, N. C. has sent us a photo of a fine Model Seagoing Tugboat the "Conestoga" built originally for the P. R. R. Co., but sold by them to the government during the war. The prototype was fitted up for service and armed with three guns. With a crew of 30 men it left Mare Island Navy Yard for Honolulu, but was lost with all hands.

When writing to advertisers please mention the Modelmaker.

PHOTOGRAPHING MODELS

By Wm. Chamberlain

The satisfaction of having completed a Model, whether it be of a Locomotive, a Motor-boat, Yacht or Flying Machine, brings much additional pleasure to the maker when he shows it to his friends, but friends are sometimes far away to whom he cannot show it. Then he will turn to photography to help him.

In taking a photograph of a model, whether in the work-shop or out of doors. The latter is best because you have a good light overhead, but do not let the sun shine on the Model. It is necessary to have a good background, or screen, preferably of a light gray color. The model being placed on a table or bench and the camera on a stand. In taking the picture carefully focus on the model allowing a fair margin of space around the model and use a small stop, giving a time exposure. Snapshots should only be taken of moving objects. Take two or three views of the model, **and only the model**, do not let any other object appear in the picture. Finally be sure to send a copy to the Editor of the Modelmaker with a short description of its construction.

Mr. B. E. Sundberg, U. S. Veterans Hospital 51, Tucson, Arizona, is planning the construction of a model sailing ship. He would be glad to hear from any of our readers who have built model ships as to the best kind of wood to use and other materials required to construct such a model.

Mr. G. H. Stegmann is hard at work on a fine Model of the U. S. Schooner-of-War "Grampus," mounting 10 guns and carrying a crew of about 60 men. This vessel was constructed at the Washington Navy Yard and launched about 1821. It was used as a gun boat on the coast and in the West Indies. She was lost with all hands off Charleston in 1843. Mr. Stegmann's model is to the scale of ¼ in. to 1 ft. We expect to be able to give a fuller description of the construction of this model in a future issue.

Mr. Elmer Wall recently paid us a visit on his way back to Chicago from his trip through Canada and New York. He showed us the completed model of his single cylinder up-right gasoline engine, 1½ in. bore by 1½ in. stroke. The cylinder, frame and stand is one casting. There is no crankshaft as the piston rod is direct connected to the large fly wheel. It ran very smoothly and almost noiseless. He is preparing sets of castings and blue prints. This would be an excellent Model for a Manual Training Instructor to get for his students to make up as part of their class work. It will develop about ½ H. P.

We regret to hear that Mr. J. G. Bathe of Philadelphia, who has been intimately connected with Model Work for a number of years, has been ordered by his physician to take a trip to Bermuda as he has developed rather serious eye trouble. We hope the rest and change of scene will have the desired good effect and that he will return very much benefited by his trip.

Dr. A. V. Blom, of Berne, Switzerland, claims he has perfected a process for the manufacture of a special lead paint that protects iron from rusting. The lead is melted in an electric furnace, certain reducing gasses and air are blown through the molten metal, which forms a scale or dross, a finely divided lead in yellow lead oxide. This is powdered and mixed with a specially prepared Linseed oil. Ironwork covered with this preparation has been found to resist the more severe tests, for prolonged periods, without showing any signs of oxidation. This is a most valuable discovery as the present practice of protecting exposed ironwork by the ordinary painting methods is both tedious and costly. The universal use of this new paint should be the means of saving millions of dollars annually as the losses from oxidation is very considerable.

Mr. Egolf has been designing and building scale models for a number of years. He has developed a special type of locomotive model which we believe will interest many of our readers. He would be glad to send full particulars to anyone interested in this line of practical working models.

Mr. Bohaboy of the Model Machine Shop has made a number of experiments with various forms of blow lamps for heating Model Boilers and has developed a model giving very excellent results. He has made these lamps in various sizes to fit the requirements for different sized boilers.

Model Railway News, contents for September. List of Passenger Carrying Miniature Railways in Great Britain. An "O" Gauge Railway. Kent's New Miniature Railway. Improving the Breed of "O" and "I" Model Railways. An Automatic Electric Switch for Model Goods Yards. Model Railway Signalling. Design for an Electric Current Collector. Model Railway Locomotive Disk Codes. Construction of an "O" Gauge Model Railway. "OO" Gauge Rolling Stock. Color Light Signals. Mr. W. E. Hitchcock's Model "O" Gauge Tank Locomotive 2—6—4 (Electrically Driven). Mr. T. W. Marsden's "O" Gauge L.N.W.R. Guard's Van. Mr. N. H. Robert's Gauge "O" South African Country Station. Our Mailbag. Club Notes. Sale and Exchange, etc.

We have been advised that the management of one of our Eastern Railroad Systems have decided to organize their own shop for the construction of scale model locomotives of accurate design and fine workmanship. This is another step towards the development of Scientific Modelmaking and a practical acknowledgment of the value of fine models from an educational standpoint.

All of our readers who are interested in "OO" Gauge Model Railways will be glad to hear the Mr. A. A. Singer and his coworker are making up some very good solid track in sections for "OO" Gauge. The rails will be rolled in solid metal and as near to actual scale that it is possible to make them.

Mr. A. J. Fisher of Royal Oak, Mich., has a very well equipped little shop where he makes a specialty of Ship Models. He is making up a line of Model Ship fittings. No doubt some of our model yacht builders will be glad to get in touch with him.

Mr. H. J. Coventry is making a collection of photos of Model Locomotives of American types. He would be very pleased to hear from any of our readers who would care to send him photos of the model locomotives they have built.

Mr. Warren B. Crater writes us he is working on a half inch scale Model of the New Jersey Central High Speed Pacific. This Model will include the improved Delta trailer as used on nearly all modern power. He has made the drawings himself and is now busy on the patterns.

We frequently get complaints from our subscribers that they have not received all of the new bers of the Modelmaker. Our mailing list consists of metal stencils printed through a machine and all the issue is mailed to subscribers at one time. There are two causes for non-delivery either the subscriber has moved and has not notified us of his change of address, or else it is due to carelessness in the handling and delivery at destination. Please notify us at once if you are not getting your numbers regularly and be sure to make a complaint at your local Post Office. Some other fellow may be getting some of your mail.

NEW YORK SOCIETY OF MODEL ENGINEERS

The last monthly meeting was held Tuesday evening, September 14, at 15 Moore Street, New York. A large attendance was on hand and there was much interest taken in deciding on the various details and plans for the Model Power Boat Races held September 26 on the Model Boat Lake in Central Park, New York. The races will commence about 7 A. M., as only one boat will be run at a time using the fixed pole and length of wire. The first race will be for members boats only. The cup for this race will be donated by Mr. F. D. Grimke. All boats must be displacement type, not over 1 metre in length and not more than 12 pounds displacement. There have been five boats entered, most of these have been specially built for this race.

The second race will be open to all comers. A Gasoline driven boat has been entered for this race. This boat has shown exceptional speed in its trial runs.

Mr. M. Bowles who has had considerable experience in Model Power Boat Racing gave an interesting talk on this subject.

The next meeting of the Marine Section will be held at the above address on September 28, and the next regular meeting will be held on October 13 at 8 P. M. All men interested in this subject are cordially invited. Full particulars of membership can be obtained from the Secretary, Mr. A. A. Singer, 15 Moore Street, New York.

BOOK REVIEWS

Locomotive Superheating and Feed Water Heating, 142 pages, 211 illus., and 4 colored page plates, 11¼ x 8¾ in., limp card covers $2.00.

The work is arranged under the following chapter headings. 1. Theory of Superheated Steam. 2. Economics of Superheating. 3. Brief History of the Superheater Locomotive. 4. Fire-Tube Superheaters (I). 5. Fire-Tube Superheaters (II). 6. Fire-Tube Superheaters (III). 7. Fire-Tube Superheaters (IV.) 8. Maintenance of Superheater Locomotives. While this work is based on English practice the designer, draughtsman and modelmaker will find a great deal of practical information therein that will be of interest to him and may give him suggestions and pointers for new development work. The illustrations and colored plates will especially interest him.

The Editor,
The Modelmaker
Dear Sir:

Since sending in my query regarding the speeds of 1-metre power boats in this Country—I have run across a description of the English boat "Sunny Jim"—published in the "Model Engineer" for May 22, 1925.

This hydroplane is 18″ from bow to step and 24″ from step aft, and has made the truly remarkable speed, for one lap of the course of 41.6 m.p.h.

She is powered with a 2-cylinder, single acting steam plant, 7/8″ bore x ¾″ stroke, turning a 3½ x 10″ pitch screw.

Assuming 40% slip, the engine would make 7,320 R.P.M. Making the further assumption that the boiler pressure is 200 lbs. per sq. in. and cut off 50%, the I.M.E.P. would be about 128 lbs. per sq. in., which would produce 2.1 I.H.P. at above speed.

Probably at least 25% of this is lost in internal friction, driving the pumps, etc., which would give a B.H.P. of 1.6.

I think it a pity that builders of small steam and gasolene engines do not take the trouble to properly test them.

It may not be generally known that a suitable fan dynamometer is very easy to build and will give results within 2-3%, provided the design and mounting are correct.

Yours truly,
B. Read
3230 Euclid Heights Blvd.
Cleveland Heights, Ohio.

Mr. Chas. F. Clark, 111 N. 49th Street, Philadelphia, Pa., has sent us a photo of his Model Sloop. It is of the rib and plank construction, the ribs are of ⅛″ oak steamed and bent to shape, the planking is ⅛″ with separate pieces cut to fit under the stern, the keel is shaped from three pieces of almost equal length. Length of Model 61″ O. A., 47″ W.L. No doubt there are other model boat builders near Mr. Clark who would like to get in touch with him and have a chat on model boats.

In the May 1925 issue of the Modelmaker on page 78 a telephone number is given for Mr. A. A. Singer. He is still at 15 Moore St., but does not use that telephone number now.

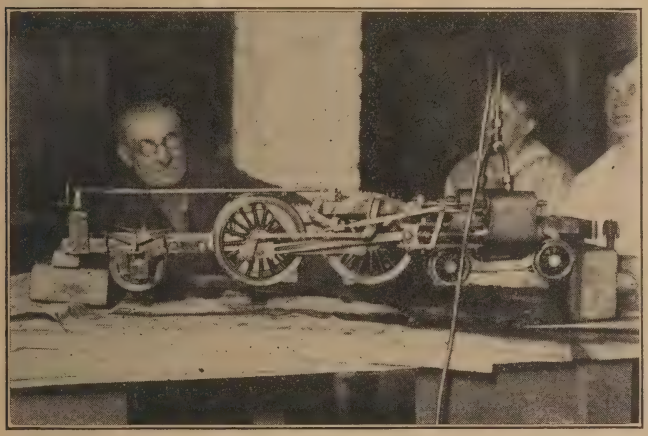
CHICAGO SOCIETY OF MODEL ENGINEERS

Editor of the Modelmaker
Dear Sir:—

The Society has spent a promising summer in the interest of Modelmaking and those attending seem to have thoroughly enjoyed themselves.

The following meetings were the most interesting.

On July 22nd, a steam test of two locomotives was made at the home of Mr. John Matthews. The tests were of an Atlantic chassis built by Mr. Matthews and a Pacific chassis built by Mr. Reithmaier. The steam was obtained from a Model Steam Tractor. Both locomotives did well at this trial test. The illustration shows the Atlantic chassis under test with the builder standing on the extreme right.



On July 8th the Society celebrated its 12th Anniversary. At this meeting every member gave a brief account of his accomplishments and their various experiences in the field of Modelmaking. The older men recalled days before the war when comparatively few men were interested in this subject and in general entertained the new members with their early experiences.

The C. S. M. E. Annual Exhibit will be held some time during November. All those having models which they would like to exhibit should communicate with the Secretary, Mr. S. C. Swanson, 7826 Coles Ave., Chicago, Ills., as soon as possible.

A. Willard,
905 Linden Ave., Wilmette, Ill..

Mr. Harry E. Webber, 29 Algonquin St., Dorchester, Mass. is interested in Model Railways and Locomotives. He would like to hear from any other Model enthusiasts living within a reasonable distance of his home with a view to an occasional get-together meeting.

We have had inquiries from some of our readers for materials for large size model locomotive castings. Mr. W. L. Daney informs us he is preparing blue prints and castings for a 7¼ in. gauge model locomotive and will advise us as soon as they are ready.

We understand there are a good many real live modelmakers residing in and near Detroit. Someone should take the initiative and have a get-together meeting with a view to forming a Model Engineers Club. Such organizations bring men together and help greatly towards the development of modelmaking.

FOR SALE

Workshop Figures made easy, a simple explanation of fractions decimals and metric measurement for the use of Modelmakers, price 35 cents. Spon, 120 Liberty Street, New York.

French Measures and English Equivalents by Brook, a complete set of tables from 1 millimetre to 100 metres, arranged in three columns metres, inches with decimals, inches with fractions; and other tables. In limp cloth to fit the vest pocket, price 50 cents. Spon, 120 Liberty St., New York.

Mr. Frank Birch writes that he can now supply complete sets of castings and blueprints of his ½" scale Pacific Locomotive 2½" gauge and that he has already booked some orders for these sets. He has finished up one set of castings and the engine runs first rate. The small photo he sent us looks like a fine locomotive. We have examined some of his finished locomotive cylinders, four and six wheel car trucks, small nuts and bolts, etc. and must say he is a finished mechanic. We are not surprised to hear he has been rushed with orders for nearly a year. He deserves all the business he gets because he only supplies the best materials, good clean castings and excellent workmanship.

WANTED

Modelmaker, November 1924, May 1925, March 1926. Will exchange copy of Mechanical Age for any of these numbers in good condition. Spon, 120 Liberty Street, New York.

Model Railway News, January 1925. Will give 25 cents for good clean copy. Spon, 120 Liberty Street, New York.

Model Power Boats by Hobbs in good condition, Spon, 120 Liberty Street, New York.

Everyday Mechanics, Nos. 1 2 and 6 of Vol. 1, Nos. 1 2 and 3 of Vol. 2. Box 2, Modelmaker.

Modelmaker, Volume 1, Number 6, November, 1924. Modelmaker Volume 2, Number 5, May, 1925. Will send a copy of Mechanical Age in exchange, Spon, 120 Liberty Street, New York.

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Blow Lamps, for model boilers all sizes made to order. Model Machine Shop, P. O. Box 5, Station Y, New York, N. Y.

Model 2-Cylinder Steam Engine, boiler, torch. Write for information. Wm. Siesel, Jr., King St., Port Chester, N. Y.

Build Yourself An Electric Clock! Blueprints and instructions for a novel model anybody can build, $1.00. Particulars free, Albert Deibig, Electrical Engineer, 1690 Park Ave., New York.

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Ship Model Fittings; Blocks, Deadeyes, Anchors, Capstans. Send for circular. Fisher, 1002 Etowah Ave., Royal Oak, Mich.

Locomotive Blue Prints—"O" gauge Pacific. 3 sheets, steam, full details, $2.00. 1 sheet, steam-electric, 75 cents. Singer, 15 Moore St., New York.

Prototype Drawings of American Locomotives and tenders: Front and side elevations with correct dimensions $1.00 each. George D. Arthur, Glenbrook, Conn.

Blue Prints of Ships for Modelmakers, send for circular, G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

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I make patterns, small castings and working models. Modelmaking is my trade. James Koch, 103 Summit Ave., Linwood, Pa.

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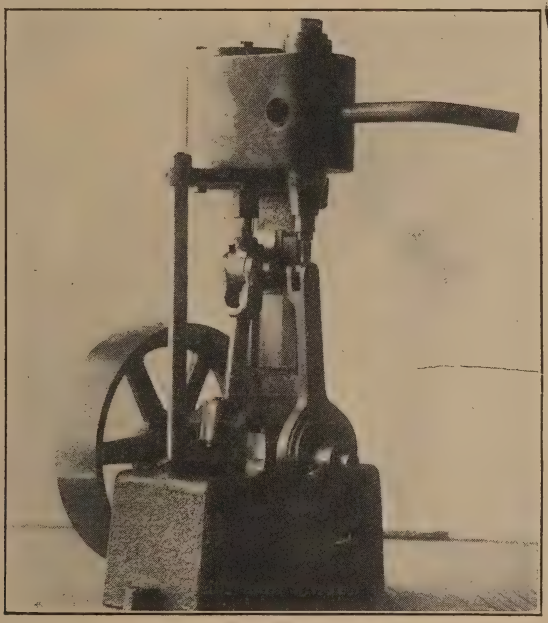

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OUR FOREWORD

The writer believes that the question "Have you a Workshop" is one that vitally interests all of our Modelmakers whether they are trained engineers, mechanics or pure and simple amateurs, for without tools and a place to use them no piece of model work can be constructed.

Many of our readers reside in houses, where there are suitable spaces, a light corner in the basement, a spare room, or part of the attic that can be converted into a real man sized workshop. A basement space that has good light, is dry and airy is preferable if the owner contemplates a fully equipped shop, because it has usually a firm concrete floor, a good foundation for machines and work benches. It is much easier to keep warm in the winter and being near his source of suppy (electric, water and gas), he can have as many lights as he desires and the conveniences of gas and water connections. A corner is best, where there are windows on both sides, then there will only be two sides to board up, making a nice cozy room. Measure out on the floor the size of the space required, then get the following lumber: two pieces of 3″x6″ for floor plates; some 2″x4″ for uprights, and sufficient 8″x1″ siding, and a door with a good lock.

Punch four holes in the concrete floor and insert in each hole a 6″x¾″ bolt, head down, filling up around the bolt with fresh cement; drill two corresponding holes through each floor plate to fasten them down securely with nuts screwed tight. The siding had better be nailed on the inside. This will give a finished appearance and a good wall space for shelving and places to hang up tools. It would be easy then to build your work benches to these partitions, leaving the wall spaces with the window lights for lathes and such like tools.

The height of your work benches should be carefully considered, also the question of a moveable wooden floor, in sections, so that the worker does not have to stand directly on the concrete floor. Shelving, bins and drawers can be built in under the benches, but leave a clear space between the lowest shelf and the floor for convenience of cleaning out.

The bare rafters overhead will make it easy work to fasten your wiring so as to have the

drop lights just where you want them, and if you desire any overhead pulley or shafting it can be securely fixed in place.

Some men prefer to have their workshop out of doors, but that entails more expense for materials and considerable more work in its construction, not forgetting the question of heating for winter use.

In the case of a Modelmaker residing in an apartment house he could not have such a complete equipment as he could have in the basement of a single house. In fact, he might be limited to the space of a spare cupboard or only a corner in the living room. In the latter case he could have a combination bench and cabinet. One of our friends has such an outfit in a New York apartment. When not in use it looks like a large panelled cabinet, the top of which lifts up, disclosing a bench upon which is fastened his bench lathe and motor. On the inside of the top are places for an assortment of tools. The front opens in two doors, each fitted with places to hold tools. Below the bench are a number of drawers, for supplies, materials and tools. A foot controller for his motor he places on the floor within easy reach of his foot, current is taken from the house supply by using a wall plug.

Other men have their "sanctum" in the attic. We propose to publish some articles on "Our Modelmakers' Workshops" and would like to receive photos and descriptions from any of our readers who would kindly send us the necessary data. Such articles will prove not only helpful, but suggestive to those who are considering the question of having a workshop of their own.

Mr. H. J. Coventry, Asso. Am. Soc. M. E., advises us that he has been appointed to take sole charge of a model shop for one of our large Eastern railroad companies. It is being equipped with up-to-date machinery as the Board of Directors are anxious to have some very fine scale models built representing their latest locomotives. We know that our readers will congratulate Mr. Coventry and wish him every success in his new work, and we hope later on that the Company will give him permission to supply us with description and pictures of some of the models that Mr. Coventry and his assistants build. To our knowledge this is the third railroad company that has authorized the development of a Model Building Department, and it emphasizes the fact that scientific modelmaking is coming into its own in the United States. Mr. Coventry wishes us to say that his new work will occupy so much of his time that he will not be able to do any more model work for private customers, except supply complete sets of rough castings and drawings.

Mr. Murray W. Wade is interested in the construction of Models of Sailing Ships. He has the drawings of a number of such models, which are made to half actual size. As a Director of Manual Training he is in the position to know just what the boys can use to the best advantage. He can supply sets or single blue prints of any of these Models.

When writing for information please enclose stamped and addressed envelope.

THE NEW YORK SOCIETY OF MODEL ENGINEERS

The Members of this Society held their first Model Power Boat Races on the Model Boat Lake, Central Park, New York, Sunday Morning, September 26. It was a bright sunny day with a gentle breeze, but not sufficient to unduly disturb the lake's surface.

A pole with fifty feet of fishing line attached was used. Mr. T. E. Singer, in waders, being in charge of the pole in the lake.

RACE FOR MEMBERS BOATS For Mr. F. D. Grimke's Silver Cup

For displacement boats not over a metre in length and not more than twelve pounds displacement. Course five consecutive laps on a taut cord. Each contestant to be allowed two trials. The decision of the Judges to be final.

Mr. Habl's boat was the first to take to the water, but owing to the hook at the end of the line not being properly fastened to the boat, after steaming about half a lap, the boat got adrift and went ashore. It was stopped by an onlooker, but unfortunately the propeller struck the bank breaking off one of the blades.

Mr. F. Zimmer's "Kathleen IV" was the next boat. It got away to a good start and was steaming in good shape when on the third lap the propeller fouled some floating weed and the boat stopped.

Mr. W. Elliott's "B. G. E. 32" was the next contestant. It got away in fine shape, but owing to the cord not being attached to the boat far enough aft it did not run with a taut line.

"Kathleen IV" then made her second, trial, getting away to a good start on a taut line and completing her five laps in fine style.

Mr. Habl had completed repairs to his boat and took his second trial. She got away on a slack line. On the third lap the blow torch went dead.

"B. G. E. 32" with torch refilled and boiler replenished took her second trial getting away on a taut line and ran eight laps in splendid style, winning the Cup.

There were four entries for this Race, but owing to sickness Mr. Thorpe was unable to finish his boat in time for the race.

Result of Members Race for the Grimke Cup

"B. G. E. 32," 5 laps, time 1 min. 38 4-5 secs. Winner of the Cup. Fastest lap 18 secs.

"Kathleen IV," 5 laps, time 1 min. 57 4-5 secs. Second place, Fastest laps 22 secs.

Mr. Habl's boat was not timed for reasons given above.

THE FREE FOR ALL RACE 10 Laps

There were four entries for this Race. Mr. Bosshardt's "Clifton," driven by a gasoline motor, Mr. Anton Bohaboy's "Bobo V," a powerful steam driven boat,

1 and 2—Mr. W. Elliott and the Winner "B. G. E. 32"

3—Mr. Anton Bohaboy's "Bobo V"

4 and 5—Mr. E. Zimmer and "Kathleen IV"

Mr. Johnson's Hydroplane and Mr. Elliott's "B. G. E. 32."

"Clifton" got away to a good start at a fast pace. In fact this boat made the fastest lap, in 15 seconds. After running six laps spark-plug trouble developed stopping the engine.

"Bobo V" got away with a jump on a taut line and ran nine laps in 3 minutes then blow torch failed.

"Clifton" took her second trial getting off with a rush on a taut line and ran six and a quarter laps then died out. The connecting wire to spark-plug had worked loose.

"Bobo V" came to the starting line all primed up and got away on a taut line in fine style reeling off the laps on 200 lbs. of steam. On the tenth lap a sail boat fouled the line and it parted. "Bobo V" made a bee line for the shore and although a policeman tried his best to stop her she hit the bank pretty hard and started some of her planks.

Mr. Johnson's Hydroplane was given a trial run, long before any of the other boats arrived on the field of action. However, after circling the lake, the Hydroplane developed boiler trouble which prevented it from participating in the race.

Mr. Elliott's boat did not participate in the Free for All Race owing to a broken rudder.

Results of the Second Race Free For All—(10 Laps)

Only two entries.

"Clifton," Gasoline power plant, 6¼ laps, time 1 min. 46 4-5 secs.

"Bobo V," Steam power plant, 9¼ laps, time 2 min. 52 2-5 secs.

No race, as neither boat completed the ten laps.

In the Free for All Race both boats during their trials completed five consecutive laps, which were used as a basis for determining their speeds.

"Bobo V" made the five consecutive laps in 1 min. 33 secs., or 18.6 secs per lap. "Clifton" made the five consecutive laps in 1 min. 25 secs or 1 lap in 17 secs.

PARTICULARS OF BOATS

"B. G. E. 32," owner Mr. W. Elliott. Displacement 11 lbs., length 32 in. O. A built up hull, speed boat type, single screw, 2 bladed propeller. Power plant —Russel 2-cylinder, single-acting piston valve Steam engine. Water-tube boiler, with superheating coil and gasoline blow torch. A well built model, with compact power plant, very steady under steam.

"Kathleen IV," owner Mr. E. Zimmer. Displacement 11 1-8 lbs. Length 39 in. O. A. built up hull, bottom of hull mahogany top sides and deck, maple, speed boat type, single screw, 2 bladed propeller. Power Plant 2-cylinder single-acting piston, valve steam engine; water tube boiler with super-heating coil and gasoline blow torch. A handsome model, well balanced with compact power unit. A very steady running boat.

Mr. Habl's Boat, 12 lbs. displacement 39⅜ in. O. A., built up hull, speed boat type; single screw, 2 bladed propeller. Power Plant, Westinghouse type, 2-cylinder single-acting piston valve steam engine, water tube boiler with superheating coil, and gasoline blow torch. A well built beamy boat.

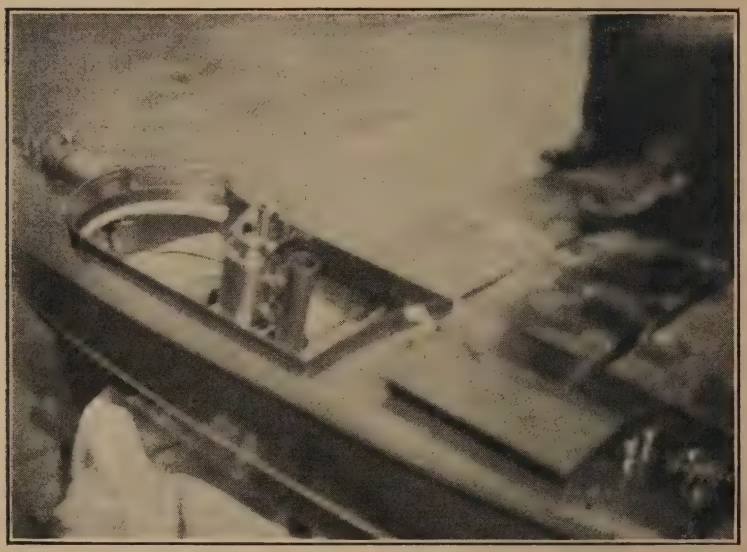
Mr. Johnson's boat. Built up hull, one metre hydroplane Power plant, Russell 2-cylinder

single-acting piston valve steam engine, flash boiler, gasoline blow torch.

"Bobo V," owner Mr. Anton Bohaboy. Displacement 22 lbs. 42 in. O. A. Built up hull, speed boat type, single screw 2 bladed propeller. Power plant—Bohaboy 2-cylinder single acting poppet valve steam engine, water tube boiler with superheating coil and a large size gasoline blow torch. A well balanced powerful boat.

"Clifton," owner Mr. Bosshardt. Displacement 18 lbs. 37 in. O. A., beam 9 in., depth 5½ in., bread-and-butter construction hull, power launch type, single screw, 2 bladed propeller. Power plant—Single cylinder, gasoline engine 1¼ in bore by 1¼ in stroke, 4-cycle, water jacketed cylinder, spark-plug ignition, Ford coil and dry cells. A fine model, good lines and very fast. Her forefoot rising well out of water when under way. Her fastest lap was 15 seconds, but for her slight mishaps she ought to have reeled off the ten laps in record time.

A good many members and their friends were present as well as a large number of interested spectators.



Mr. Bosshardt's Gasoline Power Boat

The official timers for the Cup Race were Messrs. Crosley (of Motor Boat) and Pope. Messrs. Bolles and Zimmer taking the watches for the Free for All Race.

The Judges were Messrs. Agahan, C. Johnson and Bolles.

Official Scorer, W. Edmunds Spon.

Official Photographer, F. D. Grimke.

Mr. Charles G. Davis' recent work, "Ship Models and How to Build Them," while the contents are excellent as far as they go, yet it was seen at once that it was lacking in information on a number of very important points. The Publishers sent out a questionaire to several hundred Model Boat Builders asking for information. Many of these gentlemen replied giving considerable data and suggestions on the subject. These replies were carefully tabulated and from this and other information Mr. Davis had on hand he has prepared another book entitled "The Ship Model Builders Assistant," in which he has endeavored to supply the information not contained in his other work and he certainly seems to have accomplished his object. He has prepared a number of drawings of details which are very clear and explicit. This book is really additional information which, when used with his other book, "Ship Models," will be found exceedingly valuable and instructive to all those who are interested in the construction of real Models of Old Time Sailings Ships. The Ship Model Builders Assistant contains 266 pages, 499 figures, size 6¼x9½", bound in library buckram. This work has appeared at the psychological moment; because there are an ever increasing number of men taking up this fascinating pastime, and now that most of the summer sports are coming to an end the hobbiest is more ready to turn to his workshop for his recreation during the long evenings of the coming winter.

We acknowledge with thanks Mr. F. D. Grimke's courtesy in supplying us with photos of the various model power boats which competed in the N. Y. S. M. E. Power Boat Races. Full particulars of these races will be found in this issue.

Model Engineer, principal contents for July 29, August 5, 12, 19, 26 and Sept. 2: Launch Building and Model Engineering. Small Castings in the Foundry. On Electrical Condensers. A Model Blast Furnace. A Small Stationary Steam Engine. Ball Bearings. The Science Museum South Kensington. Locomotive Prototypes. Track Circuit on Railways. Making Fine Jet Nozzles. Improving a Cycle Dynamo. Ross Pop Valves. D. C. and A. C. Fractional H.P. Motors. Diagonal Paddle Engines for a Six Foot Model Paddle Steamer. A Long Stroke Automatic Centre Punch. In the Glow of the Forge. A New Kind of Bearing Metal. L. B. S. C. on Boiler Fittings, Safety Valves and Other Oddments. Television, Some Attempts to Solve the Problem. Locomotive Whistles. Milling in the Lathe. A New 3½" Double Back-Geared, Gap Bed Screw Cutting Bench Lathe. Model Yachting Association News and Notes. Model Yacht International Races. Design for a Cool-Working Blow Lamp. A Model Ship's Dinghy. A Column of Live Steam. Days in the Shop. A Small Grinding Head for Use in the Lathe. Mounting "O" Gauge Boilers. Fittings for "O" Gauge Locomotives. Force Pump and Air Chamber. Practical Private Telephone Installations at Small Cost. On Accumulators. Recent Inventions. Queries and Replies. Practical Letters. Society and Club Doings. Light Engineering Equipment and Supplies.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF THE MODELMAKER, published monthly at New York, N. Y., for Oct. 1, 1926.

STATE OF NEW YORK } ss.:
COUNTY OF NEW YORK }

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared W. Edmunds Spon, who, having been duly sworn according to law, deposes and says that he is the Editor and Business Manager of the MODELMAKER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations printed on the reverse of this form, to wit:

1. That the names and addresses of the publishers, editor, managing editor, and business manager are:

Publishers, Spon & Chamberlain, 120 Liberty St., New York, N. Y. Editor, W. Edmunds Spon, 120 Liberty St., New York, N. Y. Managing Editor, none; Business Manager, W. Edmunds Spon, 120 Liberty Street, New York, N. Y.

The owners are W. Edmunds Spon, 120 Liberty St., New York; Wm. Chamberlain, 120 Liberty St., New York.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: NONE.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation, has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

W. EDMUNDS SPON,
Editor and Business Manager.

Sworn to and subscribed before me the 23rd day of September, 1926.

J. M. HARLEY,
Notary Public, New York Co., New York.

(My commission expires March 30, 1927.)
(Seal)
Certificate filed in New York Co. No. 301, Reg. No. 7183.

Mr. Harry Jeffers, Saginaw, Mich., is interested in Model Marine Steam Engines. He would like to get in touch with any of our readers in his locality who may be interested in model making with a view to an occasional get-together meeting. Here is another opportunity to form the nucleus of a model engineering club.

We expect very soon to have copies of the new edition of Paint and Color Mixing by A. S. Jennings. This has always been considered one of the most practical works on this subject. The new edition, the 8th, will contain a good deal of new matter, about 64 more pages, including some features not dealt with in earlier editions. The hundreds of formulas and recipes as well as the many colored samples add greatly to the value of this well known work. If you are interested drop us a postcard and we will give you fuller particulars.

Do you want to get in touch with other Modelmakers in your district? If so, send us your name and address stating what line of model work you are interested in and if you have your own workshop and we will try and put you in touch with other Modelmakers in your neighborhood.

A 5/8" x 3/4" PISTON VALVE VERTICAL ENGINE

By H. J. COVENTRY, Assoc. Mem. Am. Soc. M. E.

This little engine, while not intended to be a model of any particular type, is designed along lines of modern proportions, and of easy construction.

Before proceeding with a description of the construction, attention is drawn to the following points. A piston valve is used, with inside steam admission, giving the advantage of elimination of stuffing box, and its friction; any steam that might leak from the valve end, would only be exhaust steam, and as the steam is very wet, the water acts as an effective seal in conjunction with the small grooves turned on the valve spindle.

The piston valve also has the advantage of being balanced with the result that irrespective of the steam pressure, the work taken from the engine to move the valve is negligible. Whereas the slide valve with its flat area and steam pressure acting on the area takes quite a considerable amount of work from the engine. In fact some badly designed models with slide valves too large absorb so much energy in driving the valve, that little is left for other purposes.

Now the feature of this model is the long neck provided in the bottom cover of cylinder; this, if made a nice fit to rod, is all that is required to make the rod steamtight, while the piston is a plain, nicely fitting plug, with a few small plain grooves turned on its edge. These grooves act the same way as the grooves in the piston valve, and are quite effective for pressures up to 40 lbs. per sq. in. These features all help to produce a very free running and powerful little model. The writer has had one of these engines running for over 300 hours, without leakage from steam; speed ranging around 4,000 R. P. M. with 40 lbs. sq. in.

Passing now to the Construction

Bedplate is a simple box casting, and as the seatings for column also bearings are all in the same plane it is only necessary to pass a file right across. Another way is to hold the casting in the chuck, and face right across all seatings.

Next take the bearing caps, which are cast together, and fill up flat on bottom, and file up the curved portion to dimensions. Drill for holding down screws, and then saw apart. Mark the centre line on caps and bedplate, then take a small square file, and file a small V notch on the centre lines on both caps and bedplates. Now tin the faces with soft solder, and sweat cap and bedplates, taking care to get the notches of cap and bedplate in line. Drill into bedplate, the tapping holes for 2.56, holding down screws, and drill through for bearings.

If a small drill is used first, followed by a slightly larger one and so on till final 5-16 in., it will be found quite an easy matter to obtain holes that are in line, and exactly half in bedplate, and half in cap, by hand without any special rig; because the first small drill will follow

the notches already filled in cap and bedplate.

Before unsoldering the caps, file up sides inside and out to required dimensions, and stamp a number, or suitable mark, on each. Now they may be detached and solder wiped off.

Bearing Brasses—Among the castings is a piece of half round brass; take this and file up the flat face clean, then tin it with soft solder, cut in half and lay one half over the other. This gives a circular piece, which may be held in chuck and brasses finished outright. Heat the finished brasses and two perfectly fitting halves are obtained ready to go in bedplate. A small brass pin, say 1-32 in. dia. let into brass and bedplate, will prevent the brass from turning. The top one need not be fixed to cap at all. A 3-32 in. hole drilled in top of each cap completes the bearings.

Next place a piece of 3-16 drill rod on bearings, and from the side of this, mark off centre for front column at the correct distance, after deducting 3-32 for half diameter of rod. Drill and tap hole for front column, taking care to get it square with bedplate.

Front Column is of steel turned between centres and screwed.

Back Column.—First file up the crosshead, guide face, using a narrow pillon file for the slide way—or if a milling attachment is available, it may be milled with an end mill held in the chuck.

Having produced a flat surface place the casting on a surface plate, with the finished face down. Now with marking gauge scribe a line on top and bottom feet, any point will do, now turn on its side, and scribe a line in centre of feet. Prick punch the intersection and drill with centre drill, mount in lathe and face off each end as close to centre as possible. A stroke or two with the file will clean off the "pip" left by centre drill and the feet should now be square, with guide face.

Cylinder.—First face off top and bottom to proper overall height. This may be done by holding it in a chuck. Next mark out the centres, then clamp on faceplate of lathe and adjust till centre is running true. Drill and ream from lathe back center.

Covers.—The castings will have chucking lugs so all that is necessary is to grip in chuck by the lug, face, turn and part off at one operation. The bottom cover has the piston rodhole drilled and reamed at same setting. A piece of ⅛ in. drill rod with half filed away to form a D bit, and hardened, makes a good tool for this operation.

The hole should be drilled first with a No. 31 drill.

(To be continued)

We have had inquiries from some of our readers for literature on the construction of American model locomotives. We do not know of any book specially on this subject, except Volume 2 of the Modelmaker, which contains a number of illustrated articles describing the making of model steam and electric locomotives of American design. The most important of these articles were written by some of the best Modelmakers in the U. S.—A. W. Line, H. J. Coventry, J. A. Joslin, Arthur Curran, J. H. Guild, W. L. Daney, Jas. G. Dunn and others.

Copies of this Volume can be obtained from the Publishers.

OUR MODELMAKERS' WORKSHOPS

Mr. J. W. Neptune
Member Akron Association of Model Engineers

In reply to your inquiry I am sending you a description of my workshop with a photograph, which I hope you will be able to reproduce satisfactorily. It is not as clear a picture as I would like to have taken, but I think it will give your readers a good idea of its arrangement showing the variety of tools which it contains.

It is situated in my basement, which fortunately is a dry and airy one. I have placed my equipment as near together as possible to avoid unnecessary steps. I have three benches. A work bench with a built up back upon which are shelves for tools and racks to hold wrenches, hack-saws, screw drivers, etc., all arranged to be easy of access when wanted. The face of the bench is covered with a 16-gauge sheet of steel, which protects the wood top and makes it a better working surface. I have two vises mounted on this bench, also some drawers in the side for sandpaper, polishing equipment and tape for insulating purposes. On the right end of this bench I have mounted a switchboard for testing, containing meters and switches for this purpose, handling both D. C. and A. C. current supplied from a house circuit. This board controls instrument for testing armatures and coils, etc., also magnet charging unit. A generator and storage batteries are under this bench, also some large shelves for storage.

On the large bench in the corner under the power meter, I have a large cabinet of drawers, all marked, containing such supplies as screws, nuts, washers, etc. To this bench is fixed a large vise, also tool heating gas fired furnace and furnace for heating soldering irons. In the rear of this bench are shelves for iron and steel stock, paints and brushes, also a small cabinet, or nest of drawers for drills, reamers, taps and dies, and extra lathe tools. Under this bench are boxes to store belting, pulleys, gears, and electrical equipment, wire and switches, insulators, etc., and my compressor tanks for air which I use for testing and for my blowpipe.

Machine tool equipments. My machine bench is in rear of my work bench. This is very convenient because I only have to turn around from my work bench to get at my machines. On this bench I have mounted a Goodell Pratt Lathe Number 454 fully equipped, including a lot of extra parts I have made myself. A grinding head, which is arranged to handle a variety of jobs; such as sanding discs, wire brushes, and polishing tools. Then I have a sensitive drill press that will take drills up to half an inch. Under this bench I have a countershaft to drive the above tools, also a D. C. generator and an air compressor, a heavy duty ¼ H. P. motor, which gives plenty of power when only one machine is in use at a time. I have a 9″x24″ screw cutting back geared engine lathe.

At the right of this bench, but not shown in the photo, I have a saw table handling 6″ saws

and grooving head. I am about to install a South Bend Lathe 9"x3'.

I have built all the benches, cabinets, emory stand and saw table and drill press myself and take a great pride and pleasure in keeping my little shop clean and in order. I feel well repaid for all the money, time and effort expended in getting this equipment in running shape. This shop I call my "holy of holies" and the boys, when they call, always know where to find me.

I use motors for power, using ¾ H. P. in all.

[We hope this article will interest our readers and induce others to send us descriptions and photos of their workshop. Do not hesitate because your outfit may seem small and insignificant in comparison with Mr. Neptune's. We all have to make a start. Mr. Neptune is evidently an old timer and a first-class mechanic.—Ed.]

Mr. F. W. Icken advises us that owing to press of business he is not able to devote any time to making up parts for the Morgan Glider, and requests us to notify our readers accordingly. He appreciates all the business they have sent him and hopes to get some other firm to attend to this matter for him.

Just a few words to remind our subscribers that our stock of back numbers of the Modelmaker is getting very low. We would suggest they look through their numbers and if their Volumes are not complete to let us know what they are short before our stock is exhausted. Back numbers are only 10 cents each.

FOR SALE

A Real American ½" Pacific Locomotive. Castings and Drawings, $30.00. Bronze Balls ⅛" dia. up. Small Cylinder drain cocks $1.25 per pair. Displacement lubricators $1.25 each. pressure gauges ¾" and 1½" dia. $3.00 and $4.00. Look for special advertisement next month. Frank Birch, General Delivery, Highland Park, Mich.

Constructional Blueprints — 24" Model Racing Yacht, as illustrated in February Modelmaker. 1 sheet, $2.25. Perry's Flagship, the brig Niagara, 3 Sheets, $5.00. These blueprints give all details necessary to build above models. A. R. Ferris, 284 East 151st Street, Cleveland, O.

Blue Prints of Ships for Modelmakers, send for circular, G. B. Douglas, 165 Summit Ave., Upper Montclair, N. J.

Blow Lamps, for model boilers all sizes made to order. Model Machine Shop, P. O. Box 5, Station Y, New York, N. Y.

Locomotive Blue Prints—"O" gauge Pacific. 3 sheets, steam, full details, $2.00. 1 sheet, steam-electric, 75 cents. Singer, 15 Moore St., New York.

WANTED

Model Railway News, January 1925. Will give 25 cents for good clean copy. Spon, 120 Liberty Street, New York.

WORK WANTED

I make patterns, small castings and working models. Modelmaking is my trade. James Koch, 103 Summit Ave., Linwood, Pa.

FOR SALE

French Measures and English Equivalents by Brook, a complete set of tables from 1 millimetre to 100 metres, arranged in three columns metres, inches with decimals, inches with fractions; and other tables. In limp cloth to fit the vest pocket, price 50 cents. Spon, 120 Liberty St., New York.

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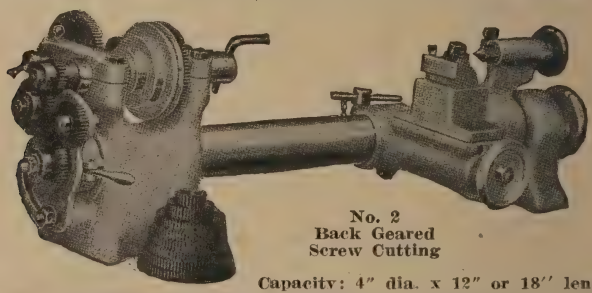

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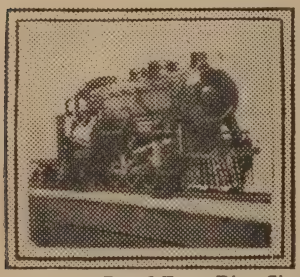

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We still have a few copies of Nos. 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12 of Vol. 2. Price 10c each.
SPON & CHAMBERLAIN, 120 Liberty Street, New York

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Editor—W. Edmunds Spon

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OUR FOREWORD

Another wonderful Exhibition of fine models comprising examples of Modelmaking in all branches of this art has just been held in London, England, and from the particulars given in recent issues of the Model Engineer it will go down in history as one of the most complete and successful exhibitions of modelwork.

Modelmaking has reached a high stage of perfection in Great Britain, where it embraces a very large following drawn from all walks of life.

The interests which contributed to this great Show may be classified under four Sections.

1. The Loan Section, a valuable collection of Models of all kinds both old and new.

2. The Trade Section, including models, supplies, tools and accessories.

3. The Societies and Clubs.

4. The Competition Section comprising the individual work of nearly 200 private Modelmakers.

Besides these four sections were many other attractions, two especially deserving special mention. Major Phillips series of demonstrations of Wireless control of model railways and The Model Engineer Movies.

Although the actual place of Exhibit was beyond the reach of most of our readers, it is quite possible that some of our American modelmakers were on the spot and able to fully enjoy it from actual observation.

The interest in Modelmaking is growing rapidly in the U. S. and Canada and it is to be hoped the time is not far distant when it will be possible to arrange for a similar Annual Exhibition of Models in one of our great centres, where Models from all parts of this country can be shown, and competitions for awards aranged for, and where our friends in the trade can display the materials they specialize in.

The Chicago Society of Model Engineers have given an annual exhibition for about ten years, and they are planning another Exhibit this month.

The New York Society of Model Engineers are also making arrangements for their first public exhibition of model work.

The Akron Association of Model Engineers have a growing membership, including a number of experienced modelmakers who have constructed quite a few fine models. It would help them to increase their member-

ship if they could arrange a public exhibit of their work.

The Toronto Society, The Canadian Model Engineers Club, have made several very creditable exhibits of model work at the Canadian National Annual Exhibition at which no doubt they will be represented this year.

Detroit and its environs house a good many interested in this Hobby. No doubt they will be able in the near future to stage a public exhibit of their Work and by this publicity get together sufficient supporters to organize a Model Engineers Club.

Our greatest obstacle to united action is the fact that our Modelmakers are scattered over a vast extent of territory, but if the various groups could each put over a small public exhibit annually the way would eventually open up for an Annual National Show that would do justice to the skill and workmanship of the American Modelmaker.

Pass the good word along, boys, and see what your town can do in this matter.

We shall be glad to hear particulars from any club who have held an Exhibit this year.

4″ GAUGE LOCOMOTIVE

4—4—0

Mr. C. C. Helmick

Member Akron Assoc. M. E.

This working model Locomotive was constructed by Mr. Helmick and is an exact reproduction from the original 1900 that hauled President McKinley's Funeral Train on the N. Y. C. R. R. We produce it not only for its historical value, but as an example of a fine piece of scale model work.

Data

Length, 41″
Height, rail to cab top, 10½″
Gauge, 4″
Wheels Drivers, 5″ dia.
Wheels Pilot Truck, 1½″ dia.
Wheels Tender, 1½″ dia.
Cylinders, 1″ bore by 1⅝″ stroke.
Boiler, copper tube.
Tubes, ¼″ copper.
Number of tubes, 5.
Boiler Pressure, 125 lbs.
Fuel, coal.
Tender Capacity, 2 qts. water.
Tender Capacity, 2 lbs. coal.
Couplers, M—C—B Automatic.

Air brakes working on all wheels except pilot truck.

Cab contains the regular equipment including throttle on locking quadrant. Reversing lever, locking in any position.

Bell, whistle and headlight work.

Feed pump in tender.

Dummy injector in Cab.

Now that Christmas is drawing near most of our readers will be thinking of Christmas Gifts. An annual subscription to your favorite magazine, a lathe, some necessary tools, or practical handbooks are items that might go down on your list. It may be a welcome suggestion not only to make up your lists early, but to place your orders as soon as possible to ensure prompt delivery.

MODEL OF THE CLIPPER SHIP FLYING CLOUD

BUILT BY MR. J. W. C. CORBUSIER

I am sending you two pictures of my Model of the Clipper Ship "Flying Cloud," Donald McKay's famous Clipper Ship. She made the record run of 89 days from New York to San Francisco. This record has never been surpassed by any sailing vessel, and only equalled by one, the "Andrew Jackson." The "Flying Cloud" was built by McKay in East Boston in 1851. Length 225 ft., breadth 40 ft. 8 in., depth 21 ft. 6 in. Tonnage 1783.

My Model was made from drawings by the Boucher Co., and most of the rigging from drawings by Mr. G. B. Douglas.

The hull is 26½" L. W. L. and the rest in proportion according to the drawings. She sails very well under a moderate breeze and would go under a stiff breeze if it could be reefed, but it is too small for that.

The rigging is all fish lines of different sizes and all sails will turn to catch the wind from one side or the other; the lower yards are hauled same as on the actual boat, but the others are run from one end of the yard through a block fastened at the proper place to the other end of the same yard, the fake ropes run from this block to the pins.

All blocks and deadeyes are made from celluloid knitting needles, bored and grooved as real blocks are.

Most of the deck houses and fittings are made out of cardboard to lighten the weight, as I have found it hard to have a boat draw the proper amount of water and not have it top heavy. The wheel is made from a piece of brass clock wheel.

Details and Measurements

Scale, ⅛"=1—0"
Length, O. A., 28¾"
Length, L. W. L., 26½"
Depth Main Deck to Keel, 3⅛"
Beam, Midships, 5⅛"
Hull, 4-piece bread and butter type, hollow, walls ¼" thick
Dimensions of for'ard deck house, 3" by 5¼", height 3 1/16"
Dimensions of aft deck house, 1 9/16" by 2¼", height 3 1/16"
Dimensions of aft companionway, ⅝" by 15/16", height ½"

Height of top of bulwarks from deck, 11/16″

Material for rigging, fishlines of various sizes, small 4½ test, medium 6 test, large 14 test.

Number of deadeyes for lower masts rigging, 144

Number of deadeyes for topmasts rigging, 44

Number of deadeyes for topgallant masts rigging, 16

Number of blocks used, 121

Number of small boats, 5

Blocks, owing to their smallness none of them have sheaves, but they are pierced with 1, 2 and 3 holes to act as single, double and triple blocks. Blocks are 3/32″+ large way of oval and as small as can be made in width necessary for 1, 2 or 3 holes.

Blocks and Deadeyes are made from celluloid knitting needles as wooden ones are too prone to break.

Deadeyes, ⅛″ round, 1/16″ thick.

Dimensions of Masts and Spars

	Length of	dia. at heel	dia. thin end
Gibboom	7¼″	7/32″	3/16″
Bowsprit, exposed	3½″	11/16″	9/16″
Lower foremast, from deck	7½″	⅜″	5/16″
Foretopmast	5½″	3/16″	3/16″
Foretopgallant mast	7⅜″	⅛″	1/32″
Main mast, from deck	8⅞″	⅜″	⅜″
Main topmast	6″	3/16″	3/32″
Main topgallant mast	8¼″	⅛″	1/32″
Mizzenmast, from deck	7″	¼″	7/16″
Mizzen topmast	4¾″	⅛″	3/32″
Mizzen topgallant mast	6¼″	3/32″	1/32″
Yards, foremast		dia. at middle	dia. at ends
Main	8¾″	¼″	3/32″+
Topsail	6⅞″	3/16″	3/32″—
Topgallant	5⅝″	3/16″	1/16″
Royal	4″	5/32″	1/16″—
Upper Royal	2¾″	⅛″	1/32″+
Yards, mainmast			
Main	10⅜″	9/16″	3/32″
Topsail	8″	7/16″	3/32″—
Topgallant	6¼″	5/32″	1/16″
Royal	4⅜″	⅛″	1/16″—
Upper Royal	3″	⅛″	1/32″
Yards, mizzenmast			
Main	8″	3/16″	1/16″
Topsail	6¾″	5/32″	1/16″—
Topgallant	4¾″	⅛″	1/32″+
Royal	3½″	⅛″	1/32″
Upper Royal	2¾″	3/32″	1/32″—
		dia. at heel	dia. thin end
Mainboom	6⅞″	3/32″	1/16″
Gaff	4⅞″	3/32″—	1/16″—

Where the + sign is given it indicates a little over the measurement, and where the — sign a little under the measurement.

AKRON ASSOCIATION OF MODEL ENGINEERS

Mr. J. W. Neptune.

The members gathered at the home of Mr. Yost on Wednesday evening, October 20th. The business session was very interesting. A number of letters were received asking for information about this Association, also applications for membership, some of which were voted upon.

There were Visitors present who brought some models for inspection.

The President, Mr. C. H. Lea, brought his "O" Gauge Locomotive, 2—6—0, and steamed her up. She worked fine.

Mr. Yost's Single Acting Marine Type Steam Engine was also tested out; a fine piece of work.

Mr. Bans showed a 2-cylinder Marine Engine which he has under construction.

Mr. Brickley and Mr. Pinpley each have a locomotive under construction.

I have been delayed in my own work waiting for a new South Bend Lathe, but when I get it installed I will make the shavings fly.

Our next meeting will be on Sunday afternoon, October 31st. We have decided to hold our meetings, in future, on Sunday afternoons to accommodate our out-of-town members and others who work on night shifts.

After the business session was over our wives were admitted and we sure had a fine time.

We shall be glad to welcome anyone interested in model work. Just send your name and address to me at 130 Paul Court, Akron, Ohio.

I also enclose a photo of Mr. Helmick's Locomotive with some data.

The San Francisco Model Power Boat Club seems to be a real live organization. The Secretary is Mr. Harry Cook, 1806 Laguna St., San Francisco, Calif. All of our Californian readers interested in model power boats should get in touch with this gentleman and ask for particulars of membership.

The American Society of Mechanical Engineers have issued a small eight-page pamphlet entitle Rules for the Construction of Miniature Boilers, Section V, A. S. M. E. Boiler Construction Code. They make a charge of 10 cents. We think this pamphlet will interest any of our readers who are contemplating the designing of a boiler.

One of our advertisers draws our attention to a slight misunderstanding on the part of some of his customers. When they purchase a complete set of castings and drawings they think it also includes materials. He asks us to make a little explanation as follows: a complete set of castings and drawing does not include materials. The word materials may cover a host of items, such as nuts and bolts, odd pieces of metal, standard rod, sheet metal and all kinds of finished fittings. To cover all of this the advertisement would read as follows: Complete set of castings, all parts, nuts and bolts, finished fittings and blueprints. We trust our readers will clearly understand the distinction as drawn above.

A 5/8" x 3/4" PISTON VALVE VERTICAL ENGINE

By H. J. COVENTRY, Assoc. Mem. Am. Soc. M. E.

(Continued from page 156)

Valve chamber is turned from ½ in. brass rod drilled and reamed 3-16 in. The outside should be turned an easy fit in cylinder, as it will eventually be tinned and sweated in. The steam passages may either be milled down with end mill, or a flats may be filed, if milling is not possible.

The steam ports are drilled taking care that they are exactly the correct distance apart. It is perhaps better to drill the ports before completely finishing the flats, filing just sufficient flat to start the drill true and then deepen the flat after drilling. The top end of chamber is tapped out for screw cover plug, run the 3-16 in. reamer through to clean out any burrs from drilling the ports and the chamber is ready for cylinder.

Now make a little jig for drilling the port in cylinder (Instructions for this were given in my note in July Modelmaker "Drilling Holes at an Angle"), bolt it in cylinder and drill the ports into the 7-16 in. valve chamber hole. If everything is done right, when the valve chamber is placed in cylinder the flats, or recesses, in chamber should line up with the drilled ports in cylinder. Now tin the chamber with soft solder, heat up the cylinder, and tin the inside of 7-16 in. hole, finally push the chamber in with a reciprocating and rotary motion and let it set, taking care that the ports are well in line, this can be ensured by a mark scribed on top of the chamber and cylinder before finally fitting.

Piston may be now turned to a nice sliding fit in cylinder bore and hole for piston rod drilled, at same setting.

Piston Rod is of drill rod and therefore true to start with, so hold the piece in self-centering chuck and turn down the small shoulder to a tight fit in piston, leaving a small amount for riveting over. This latter must be done carefully and evenly by holding the rod in a vise between copper clamps and close up to piston. With light blows and using the ball pean end of the hammer tap around the edge of the piston rod end.

Crosshead is the next item. First file up the sides and slipper edges and face, square and flat. Now take the bottom of cylinder cover, and screw down to top of column at the right distance from center line, place crosshead in guide and clamp it to guide close up to cover. Using the piston rod hole as a jig it is easy to drill the crosshead for piston rod.

Piston Valve is a plain turning job made of Phosphor, or Tobin, bronze turned to a nice close, but free running, fit to valve chamber. Before removing from lathe the scribe line should be made with a sharp V tool. This line is used in the sitting of valve.

Eccentric rod should be filed up clean all over and bored out

in chuck. The fork end should be drilled first, then the opening made with a warding file. Tap one side and open the hole on opposite side to admit valve rod pin.

Eccentric is made in two pieces, one a plain disc with a single flange and the other a cheek with boss to receive a set screw. The flanged piece is held in chuck, turned all over to dimensions, and parted from the chucking piece. Then the hole for shaft carefully marked off from center and drilled to suit shaft.

The other part of eccentric is turned by holding in chuck by the flange, and taking a truing, cut on the chucking lug, then remove from chuck, and hold by the lug and turn the outside diameter and face right across, thus cutting off from the lug. Mark the center for shaft also the hole for driving pin. Hold against the drill pad in back center and drill for shaft. Now make a small short mandrel and drive the casting on. Hold mandrel, in chuck and turn the boss, also a light finishing cut may be taken over face of flange so as to ensure the shaft hole and face being square. Finally drill hole for the driving pin, and drill and tap boss for set screw.

Now take the two pieces of the eccentric and place them on the shaft, or a piece of drill rod, get the flanges in line, and then drill a tapping hole in the flanged disc piece for the driving pin.

Crankshaft is cut from C R 8 T flat bar ¾ in x 5-16 in. Mark out with the square, also center the ends for shaft and crank. Then saw away the metal between the webs. Mount in lathe on the crank center and turn the crank pin, also inside faces of webs, taking light cuts, and using a narrow tool. When this is done saw away the metal from shaft portion, and lightly drive a piece of hard wood between the web cheeks. This must not be jammed in too tight, or the shaft will be sprung out of true. Now mount in lathe centers and turn the shaft one end at a time. A few strokes of a file will finish the web edges.

Flywheel should be chucked with outside jaws gripping the rim, face boss and drill for shaft Turn a short piece of steel to a tight fit in boss and drive wheel on. Hold the mandrel in chuck using inside jaws and finish the wheel outright.

Connecting Rod—The first operation is to saw off the big end cap, file the surface flat, also the rod end, tin both with solder and sweat together. Now clean up the sides of fork end, also a few strokes with a file from end to end will accomplish this. Mark out the center of big end exactly on the joint, and with the dividers scribe the cross head wrist pin center, from the big end center. Prick punch and drill big end for crank shaft, fork end must be drilled tapping size. Next lay the rod on a flat surface, and mark the centers at each end. Drill with a small center drill, mount between lathe centers and turn body of rod, also the fillet of big end and radius at fork end.

Drill and tap big end for bolts, unsolder the cap and clean up the joint. A 3-16 in. mandrel must now be made a tight fit in big end so that the connecting rod may be gripped tight on it by means of the cap bolts. Mount the mandrel between both centers and with light cuts face up each side of fork and big end at same time bring down to di-

mensions, and centralizing about the body of rod.

The next operation is to drill the fork end laterally and saw down, then finish up with file to form the fork. Open one side of fork with a clearance drill and tap the other side for wrist pin.

Fitting.—We are now ready for erecting:

1st—Screw front steel column into bedplate.

2nd—Mount bottom cover, which has already been screwed to the back column, and put nut on top of front column. The back column should now seat nice and square on bed plate, if everything has been done correctly. Tighten down the front nut.

3rd.—Drill through foot of back column into bedplate and tap for screws.

4th.—Put piston in rod through bottom cover and crosshead on the rod. If it is tight, place a little powdered glass and oil on the guide face and work up and down. This will produce a good bearing and nice sliding fit.

When this is satisfactory drill a hole right through crosshead and piston rod and fit a small taper pin. A piece of 20 G wire, or a thin nail, filed slightly tapered while revolving in the lathe will make a good pin.

5th.—Crankshaft and connecting rod may now be fitted in, and before proceeding further, revolve the crank shaft to see that piston rod, cross head and connecting rod are all free running.

6th.—Take bottom cover off, line up on cylinder and tap for screws. Make the joint with a thin brown paper gasket soaked in boiled oil. Do the same with top cover. When the cylinder with piston rod in it may be screwed back into columns.

7th—Revolve the crank again to see that the piston works freely and then assemble the valve gear. First slide the flange disc part of the eccentric on crankshaft, then the eccentric rod is slipped over the eccentric finally the boss portion of eccentric is attached to its companion by means of the driving screw. The eccentric must now be located at the correct angle from crank. Set the crank on top dead center and twist the eccentric till it is the correct angle behind the crank.

With an inside steam admission piston valve the eccentric lags behind the crank, instead of being in advance of the crank as when a slide valve is used. A simple way of setting the eccentric is to take a piece of sheet material and set out the angle. Drill a hole at the center, so that the templet can be slipped on the crankshaft.

Now set one line of the angle vertical or parallel, with column and bring the highest point of eccentric down to register with other lines.

Tighten the screw in boss.

8th.—Put the valve in chamber and bring the scribe line on it level with the end of chamber. Now adjust the screw eye till the eccentric rod pin can be slipped into place. Lock the eye with the nut.

9th.—Screw in the valve chamber plug mount the fly wheel and screw in the steam pipe.

10th.—The engine may now be tested with air, or steam, first oiling up all running parts and putting a good dose of oil on top of piston valve. If every

thing is O. K. the screw in eccentric boss may be sunk a little in shaft by drilling a counter sink for end of screw to bear in.

11th.—The cylinder may be lagged with asbestos and finished off with sheet iron lagging; held on with a narrow polished steel band top and bottom. The ends of bands may be held together with a touch of solder, and the joint filed off flush.

Mr. E. H. Grafton, Detroit, Michigan, writes us he has started on a design of a Model Pacific Type Steam Locomotive 1½" Scale and when he has completed this model and tested it out he will send us some particulars.

Mr. C. H. Hill, 560 South Pearl Street, Denver, Colo., is interested in the construction of a Model Locomotive. He would like to get in touch with any Modelmakers in his locality with a view to an occasional get-together meeting.

Our subscribers can help us very much if they will kindly favor us with the renewals of their subscriptions for our magazines as soon as possible. The compilation of the new subscription Lists for 1927 is a considerable undertaking, and an early reply to this request will be appreciated.

Mr. William Lewellyn, 1617 Church St., Galveston, Texas, is building a Model of an Inter-Urban Electric Car, scale ⅜", or Gauge 1, the current to be taken through a trolley from an overhead conductor. He would like to get in touch with some of our readers who have built similar cars or a multiple-unit electric car, as there is some information that he would like to get. We hope that some of our readers will be able to help out a fellow Modelmaker who is so far away from the great centers.

Mr. J. W. Hoelzer, 98 Ave. D, Rochester, N. Y., has been for a number of years interested in the construction of model steam engines and boilers, locomotives and machinery. As a reader of the Modelmaker he would like to get in touch with any one in his locality interested in model-work with a view to forming a club for mutual advice and encouragement. We hope this gentleman will hear from a number of our readers and that it will not be long before Rochester has its own Model Engineers Society.

Mr. G. A. Knapp, 1824 Mansfield Ave., Spokane, Wash., writes us he is a "model-craft" enthusiast, and would like to form a club or society locally for the purpose of stimulating and promoting interest in various classes of model work. We would ask any of our readers in his district to get in touch with this gentleman either personally or by letter with a view to helping him along in his good work.

When writing to us about your change of address we would ask that you kindly mention not only your new address, but your old address, also state which magazines you subscribe for. Our subscription cards and stencils are all classified under states alphabetically. Compliance with the above request will simplify our work in looking up subscription cards.

MODEL POWER BOAT RECORDS

Compiled by

Frederic Drayton Grimke

for his own personal use.

ENGLISH RECORDS.

SUNNY JIM III.—41.6 M. P. H. Displacement unknown. O. A. length 42", beam 9". Hydroplane, one step, wood sides, metal bottom. Engine, piston valve, 2-cylinder, single-acting, 7/8" B. x 3/4" S. Flash Boiler, 35'—0" 5/16" tubing. Blow torch, nozzle 2" dia. x 6' long. Gas tank, 100 lbs. pres. Propellor 3 1/2" dia. 10" pitch. 2 blades. Water pump, 17/64" B x var. to 3/4" S. Ratio, 5:1. Oil pump, 5/32" B. x7/16" S. Ratio 10:1, driven from water pump shaft. M. E. Volume 50, page 574.

BULLRUSH III.—38 M. P. H. Displacement 13—14 lbs. O. A. length 39", beam 14 1/2". Hydroplane, one step 3-ply wood, aluminum bottom. Engine, slide valve, 4-cylinder, single-acting, 13/16" B x 3/4" S. Twin coil type flash boiler, 33'—0" 1/4" and 12'—0" 5/16" tubing. Blow torch, 2 nozzles, 1 1/2" dia. Gas tank and pressure data unknown. Propeller, 3 3/4" dia., 12" pitch, 2 blades. Water pump, D. A. 5/16" B x 5/8" S., Ratio 10:1. Oil pump, 1/4" B x 3/8" S. Ratio 66:1. M. E. Volume 49, page 606.

CHATTERBOX III.—37 M. P. H. Displacement 13 lbs. 14 oz. O. A. length 39 3/8", beam 12", draught 1". Hydroplane, one step, tin plate. Engine, 2-cylinder single-acting, 7/8" B. x 7/8" S., type of valve unknown. Flash type boiler 40'—0" 1/4" tubing. Blow torch, 2 nozzles, 1 7/8" dia., 2" dia. x 8" long. Gasolene tank, 75 lbs. pres. Propeller 3 7/16" dia., 10" pitch, 2 blades. Water pump, 3" B. x 7/16" S., Ratio 4:1.

CHATTERBOX II.—36 M. P. H. Displacement 14 lbs. O. A. length 39 3/8", beam 10". Hydroplane, one step, tin plate. Engine, 3/8" piston valve, 2-cylinder single-acting, 7/8" B. x 7/8" S. Flash type boiler, 30'—0", 5/16" and 10'—0" 1/4" tubing. Blow torch, 2 nozzles, 1 3/4" dia., and 2 1/4" dia. x 9" long. Gasolene tank, 75 lbs. pres. Propeller 3 5/16" dia., 10" pitch, 2 blades. Water pump 3" B. x 9/16" S., Ratio 4:1. Oil pump 3/16" B. x 7/16" S., Ratio 50:1. M. E. Volume 49, page 549.

MYSTERY.—30 M. P. H. Displacement 12 lbs. Hydroplane type hull, further data unknown. Engine, 2-cylinder, single-acting. Further data unknown. Flash type boiler 32'—0" tubing, size unknown. No more data on this boat available. M. E. Volume 45, page 315.

EVIL SPIRIT.—26 M. P. H. Displacement 8 lbs. 10 oz. O. A. length 39 3/8". Modified V hull, mahogany and aluminum. Engine, 2-cylinder single-acting 13/16" B. x 5/8" S. Flash type boiler 13'—0", 1/4" and 7'—0" 5/16" tubing. No data on torch. Propeller, 3 1/2" dia., 3" pitch, 2 blades. Water pump 1/4" B., stroke variable. Ratio 5:1. Oil pump 3/16" B. x stroke variable. Ratio 120:1.

BULLRUSH II.—15 M. P. H. Hull data unknown. Engine, slide valve 2-cylinder single-acting 13/16" B. x 3/4" S. No further data known.

(To be continued)

MODEL ENGINEER Vol. 7.

How to Become an Electrical Engineer.
How to Make a Lever Switch. Illustrated.
How to Make a Model Battleship. Detail Drawing.
How to Make an Air Compressor, for Driving Model Engines. Detail Drawings.
How to set a Simple Slide Valve. Illustrated.
How to Make a Simple Model Steamer. Diagram.
How to Make an Electrical Indicator. Detail Drawings.
How to Make a Model Electric Launch. Detail Drawings.
How to Make a Gramaphone. Detail Drawings.
How to Test Small Engines and Boilers. Diagrams.
How to Make Clock Work Locomotives Detail Drawings.
How to Make a Model Vertical Marine Engine. Detail Drawings.
How to Make a Built-Up Horizontal Steam Engine. Detail Drawings.
How to Make a 40-Ampere-Hour Accumulator. Illustrated.
How to Make a Model Steam Travelling Crane. Detail Drawings.
How to Make a 1/10 H. P. Electric Motor. Detail Drawings.
How to Make a Small Lathe from "Scrap." Illustrated.
How to Make a Power Fretsaw Detail Drawings.
How to Make a Spring Lathe Chuck. Diagrams.
Model "Willians" Central Valve Engine. Detail Drawings.
Two Simple Forms of Resistance. Illustrated.
The Motor Bicycle: Its Design, Construction and Use. Many Detail Drawings.
The Rating of Model Yachts. With Diagrams.
The Stuart Compound Vertical Engine. Complete Detail Drawings.
Construction of Dug out Model Yachts. Detail Drawings.
Construction of 1/2 H. P. Water Motor. Illustrated.
Mr. Taylor's Model Launch Engine. Illustrated
The Pitmaston-Moor-Green Model Railway. Illustrated.
Model Tank Locomotive. Detail Drawings.
Mr Willis' Model Steam Launch Illustrated.
Original Designs for 750-watt Direct Coupled High Speed Steam Engines and Dynamos with Full Details.
A Four Inch Screw Cutting Lathe. Illustrated.
Detail Drawings for 80-watt Multipolar Dynamo.
Design for 100-watt Manchester Type Dynamo.
Model Electric Railway. "Three Rail System," with Diagrams.
Models made without a Lathe. Some Notes on a Large Static Machine.
The Castelli Coherer for Wireless Telegraphy. Illustrated.
A Cheap Petrol Carburetter for Small Gas Engines. Illustrated.
A Neat Model Electric Launch.
A Water-Regulating Resistance for a 1-in. to 2-in. Spark Coil. Diagrams.
A Carbon Electrolytic Interruptor Illustated.

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½" Scale Atlantic Locomotive, steam, $100.00. Horizontal Engine, oscillating 1" bore 3" stroke, $18.00. Enclosed Marine engine, ¾" x ¾", $15.00. Real Bargains. John Nielson, 131 Elza Avenue, West, Royal Oak, Mich.

Ship Model Fittings; Blocks Deadeyes, Anchors, Capstans. Send for circular. Fisher, 1002 Etowah Ave., Royal Oak, Mich.

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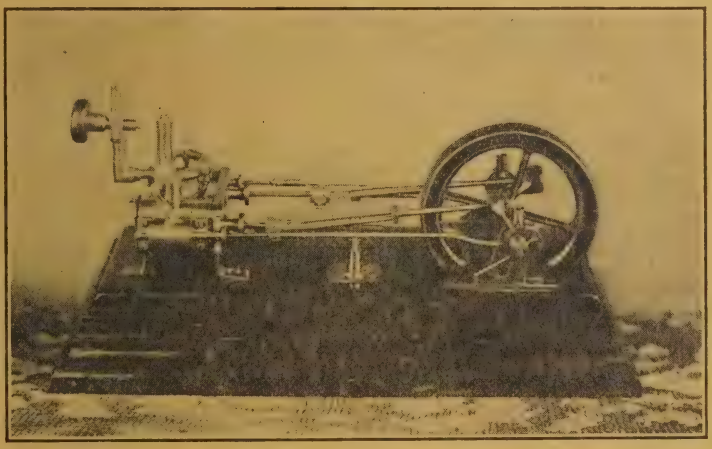

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THE MODELMAKER

Published by SPON & CHAMBERLAIN

120-122 LIBERTY ST., NEW YORK, N. Y.

Editor—W. Edmunds Spon

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Vol. III, No. 12

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OUR FOREWORD

In looking back over 1926, the past year has been full of good work done and promises for greater successes in the future.

Without question Model Boats have held the center of the stage and of this class of models the sailboat takes the first place. Hundreds of these have been built and sailed during the season.

Although a great many have been of the simple fin type sloop, some very fine sailing models of sloops and schooner yachts have been finished.

The construction of models of old-time Sailing Vessels takes second place. This kind of work appeals more to the matured model enthusiast than to the beginner, as it requires a greater amount of knowledge, skill, sustained perseverance and money than would be required in the construction of a simple sailing boat. This group of enthusiasts is composed principally of professional men, such as lawyers, doctors, engineers, architects, dentists and business men, who derive great pleasure and recreation in the pursuit of their hobby.

Model Power Boats are in a class by themselves and although a goodly number have been constructed in the past year. More might have been built but for the expense entailed and the greater amount of mechanical skill required, not only in the designing and building, but in the operation and maintenance.

In other classes of Models the Locomotive takes the lead. Quite a number of them have been finished and run and many more are in course of construction. The steam locomotive seems to be more favored than the electric locomotive.

There is a greater fascination in the operation of a steam locomotive and string of cars over a well-planned model railway system than perhaps could be obtained in the operation of any other type of working model. The electric loco is very popular. It does not require the same care and attention as the steam type.

In other classes may be mentioned Marine and Stationary Steam Engines, Gasoline and Aero Engines; the making of

equipment and tools; the laying out and equipment of the workshop; drafting of sets of scale drawings, pattern-making, boiler making, blow torches, and many other minor accessories.

The Societies all seem to have had an active year and two new ones have been added to the list. The New York Society of Model Engineers and the Akron Association of Model Engineers, both composed of groups of real live wires, doing excellent work in their own communities.

Many private individuals have been heard from and in a number of cases little groups of enthusiasts are meeting in private homes, some of which, in the near future, will be organized into regular societies.

The interest in Modelwork is growing steadily and the true value of miniature engineering is coming to be more fully appreciated.

Quite a few men of practical and mechanical ability have entered the field from a professional standpoint for the purpose of supplying model castings and parts, blueprints and accessories based upon American practice.

Several new books have been added to the literature on Modelmaking, The Ship Model Builder's Assistant, by Charles G. Davis; Ship Model Book, by George B. Douglas, and Ship Model Making, by Captain E. Armitage McCann. Our old friend the Model Engineer and its younger Companion, The Model Railways News, have kept well up to their high standard.

Before closing we wish to thank our many contributors for their valuable assistance in supplying information and illustrations. To our friends in the trade for their advertising patronage and to our large body of subscribers for their support.

We wish you one and all a Merry Christmas, and may the New Year bring you all increased enthusiasm and enjoyment in the pursuit of your favorite hobby.

Mr. M. Bollès, 119 E. 19th St., New York, N. Y., is considering the construction of a real scale model of Donald McKay's famous Clipper Ship "The Flying Cloud," considered the fastest sailing ship of her day. He has blue prints of the lines and sail plans, but wishes to get accurate data as to her deck fittings, houses, etc. He would be glad to hear from any of our readers who can supply him with this information. He has examined several models of this ship, but in each case the deck fittings and positions of the deck houses varied. Can anyone supply this data?

Egolf Scale Models have sent us the following table of "O" gauge train speeds for insertion in the Modelmaker, as they believe it will interest our Model Railway enthusiasts:

Scale Speed	Actual Speed of Model Trains
10 M. P. H.....	18 ft. per sec.
20 M. P. H.....	36 ft. per sec.
30 M. P. H.....	55 ft. per sec.
40 M. P. H.....	73 ft. per sec.
50 M P. H.....	92 ft. per sec.
60 M. P. H.....	110 ft. per sec.

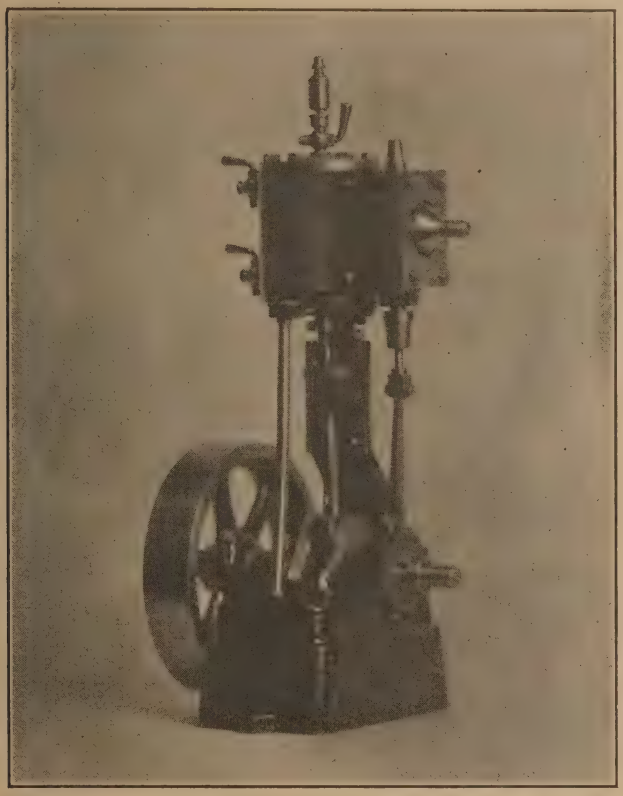
Other speeds in multiple.

It will be seen that in ¼" scale 110 ft. is 1 mile.

VERTICAL MARINE ENGINE

Mr. Frank Birch

I enclose a photo of my vertical Marine Engine. This was made up specially for Mr. Harry Jeffers of Saginaw, Mich., and tested out under 125 lbs. air pressure ran very smoothly, and under a head of 50 lbs. of steam it gave excellent results. This engine is just right for a boat of about 4 ft. long. It also runs very steadily as a stationary unit driving a small dynamo.



The following parts are of cast iron: cylinder, top and bottom covers, valve chest and cover, standard, bedplate, flywheel and eccentric sleeve.

Bronze parts: piston and valve glands, crosshead connecting rod, eccentric strap with rod, main bearing brasses, slide valve and valve rod guide.

Dimensions and Data

Cylinder, 1" bore x 1" stroke

Base, 4" long x 2" wide.

Height of engine, including lubricator, 8½"

Width of engine, including flywheel, 3½"

Flywheel, 3½", width of face, ¾"

Flywheel, weight, finished, 1 lb.

Single cylinder, double-acting, with slide valve

Weight of engine complete, 5 lbs.

Approximate speed on 50 lbs. steam, 3000 R.P.M.

Would require a multitubular boiler, 7" dia. x 14" high for stationary work

Rating, ⅛ H.P. on 60 lbs. steam pressure.

This engine under tests of only 3 lbs. of steam ran very smoothly at a fair speed, which speaks well for the design and materials of which it is made.

All of the castings could be machined on a small lathe having a 4" swing. I also have the necessary castings to make it into a horizontal engine.

Model Engineer, contents for October 7, 14, 21 and 28: The Placing of Guide Pulleys. Making Three-Part Commutators. A Useful Stand for Hand Drill. Working Model Traction Engines. Shop Shed and Road. The Model Engineer Exhibition of 1926. Locomotive Prototypes. The Mandrels of Small Lathes. A Model Vertical Steam Engine. Model Marine Notes. Yachting Associations. Clock-Making and the Small Lathe. A 1¼" Scale Australian Railway. Making and Using Bows and Arrows. Six-foot Model Steam Yacht Fitted with Compound Engines. A Small Pumping Plant for Real Work. Double-Scale Volt Meters: their Construction and Use. Queries and Replies. Practical Replies. Society Notes. The article describing the M. E. Exhibition, London, is continued through these four numbers.

Model Railway News, contents for November: New Shunting Engines for the "K" Lines. The Battle of the Gauges. The Ashville "O" Gauge Model Railway. Canadian National Railways Oil Electric Cars. Extensions to an "O" Gauge Electric System. The Layout of Country Stations. Making "O" Gauge Corridor Connections. A Simple Station Indicator. "O" Gauge Level Crossing Gates. Simple Laminated Loco Springs. The Steam Locomotive Under the Microscope. Six Coupled Side Tank Locomotive. Rail Motor Car. Mr. G. D. Arthur's "O" Gauge Line, Showing His Model American Prairie Type 2—6—2 Locomotive. Our Mailbag. Clubs and Societies. For Sale and Exchange, etc.

It gives us pleasure to state that Mr. Bathe's trip to Bermuda benefited him very much and that his eyesight is greatly improved from the change. We hope that he will soon have fully recovered from his eye trouble.

A CORRECTION

In the issue for September of the Modelmaker on page 137 referring to Mr. Elmer Wall's Gas Engine we stated it was a half-horse power. This is incorrect. He writes it is one-fourth horse power for steady pulling.

POSITION FOR CRANK-PINS ON LOCOMOTIVE DRIVING WHEELS.

Mr. F. D. Grimke gives the following solution, which is an answer to an inquiry from one of our readers. We believe it will also prove of interest to others who are building model locomotives. The finding of the right position of the two crank-pins on a pair of locomotive driving wheels.

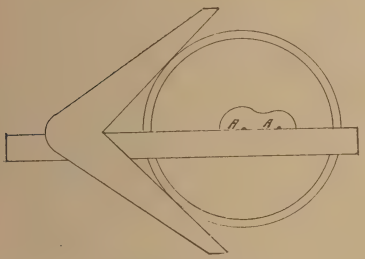


Figure 1

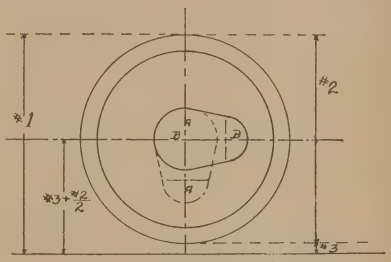


Figure 3

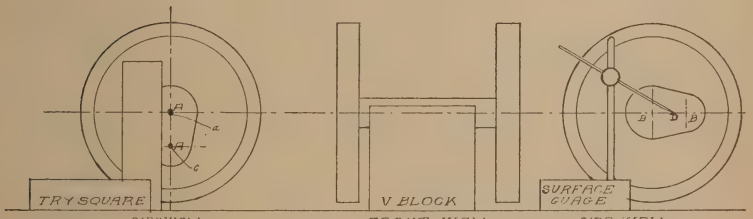


Figure 2

Take a wheel, which previously has been rough turned, a scribe and a centre gauge and place them as in Fig. 1, hold the centre gauge firmly against the flange of the wheel and scratch a light center line A. A. Repeat the process on the other wheel at B. B.

Drill holes for axle a. and crank-pins c. Place wheels on axle by hand and fasten wheel A. A. on axle. Now place the axle on the Vee block so that the wheels clear the surface plate, Fig. 2. Take the try square and turn the axle so that the centre line A. A. is 90°, or perpendicular, to the plane of the surface plate Fig. 2. Measure the total height of wheel from surface plate, Fig. 3, #1, subtract from this the diameter of the wheel, Fig. 3, #2, and that leaves the remainder, dimension #3. Halve the diameter #2 and add to it dimension #3. This last figure is the height of the point of the surface gauge scribe from the surface plate.

Suppose the wheel diameter #2=3¼"

The total height from surface plate #1=5"

Then

#1—#2=#3 or 5"—3¼"=1¾"

#2=3¼"=13x½=1⅝"

2 2 4

Then

#3+#2 or 1¾"+1⅝"=3⅜"

2

3⅜" is the dimension D. Fig. 2.

Clamp axle so that it can't roll and see that A. A. is perpendicular to the surface plate. Set the scribe of the gauge to 3⅜" above the surface plate. If the B. B. crank is 90° to A. A. the scratched line coincides with the scratch made by the surface gauge. If not, adjust the wheel so that the two lines will coincide B. B. and the scratch. When they do, drive wheel home with a wooden mallet. Mount wheels and axles in lathe and take finishing cuts.

Mr. Harry Cook, Secretary of the San Francisco Model Power Boat Club, 1806 Laguna Street, San Francisco, writes us that four of their members have new boats under construction, and that he will send us more particulars of their year's activities later.

When writing to advertisers please mention the Modelmaker and don't forget a stamped and addressed envelop for a prompt reply.

A GERMAN RECIPE FOR THE ELECTROLYTE OF DRY CELLS

The following recipe was issued during the war by the German Government for the information of manufacturers, who, owing to wartime restriction, found it difficult to obtain the materials usually employed in making dry cells.

Take 140 grammes of powdered sal-ammoniac, 40 grammes of zinc chloride, 10 grammes of ammonium sulphate, mix together in a porcelain bowl with 10 grammes of thick refined glycerine. Cover this mixture in small quantities with distilled water at a temperature of 40° C., and stir energetically until the materials are dissolved into a concentrated solution. This mixture is allowed to soak into the binding material (which may be either wheat or rye flour, glass-wool, gelatine, starch, sawdust or Kieselguhr), and the paste so formed is filled into the cells, which are closed with a parafined card top sealed with wax. In the cover two small glass tubes are provided for the escape of such gases as are generated in the cell. In compounding the electrolyte, calcium acetate can be mixed to advantage with equal parts of the sal-ammoniac. The mixture possesses excellent conductivity, is hygroscopic and does not crystallise or creep.—The Model Engineer.

One of our subscribers would like to know if any of our readers could supply all the outside measurements of the standard rails from 85 lbs. per yard to 127 lbs. per yard. If so, please send the information to the Editor of the Modelmaker.

MODEL POWER BOAT RECORDS

Compiled by

Frederic Drayton Grimke

(Continued from page 173)

ENGLISH RECORDS.

THUNDERBOLT.—12.47 M. P. H. Displacement unknown. V bottom, beam 9". No further hull data. Engine, 2-cylinder single-acting, 53/64" B. x ¾" S. No further engine data. Smithies boiler. No further data available.

EDYTHE IV.—10.02 M. P. H. Displacement unknown. O. A. length 41¾", beam 10¼". V bottom. No further hull data. Engine, 2-cylinder single-acting, ⅞" B. x ¾" S. Scott type boiler. No further data available.

RAINBOW.—8.22 M. P. H. O. A. length 42", beam 8¾". V bottom. Further hull data unknown. Engine, 2-cylinder single-acting, ⅞" B. x ¾" S. Further engine data unknown. Scott type boiler. Further data unknown.

PEP III.—Speed not recorded. Displacement unknown. O. A. length 42", beam 9". V bottom. Further hull data unknown. Engine, 2-cylinder single-acting, ⅞" B. x ¾" S. Further engine data unknown. Smithies boiler. Further data unknown.

BLUEBELL.—Speed not recorded. Displacement unknown. O. A. length 42", beam 9". V bottom. Further hull data unknown. Engine, 2-cylinder single acting, ⅞" B. x ¾" S. Further engine data unknown. Center flue boiler. Further data unknown.

SPORT III.—Speed not recorded. Displacement unknown. O. A. length 42", beam 9". V bottom. Further hull data unknown. Engine, 2-cylinder single-acting, ⅞" B. x ¾" S. Further engine data unknown. Scott type boiler. Further data unknown.

HAWK.—17 M. P. H. Displacement unknown. O. A. length 44", beam 12". Metal hull, runabout lines. Further hull data unknown. Engine, slide valve, 2-cylinder. Water tube boiler. Further data unknown.

BLUEBIRD II.—16.2 M. P. H. Displacement unknown. O. A. length 44", beam 11". Hull made of planked mahogany. Further hull data unknown. Engine, poppet valve, 2-cylinder, single-acting, 13/16" B. x ⅞" S. Water tube boiler, 20 tubes. Blow torch. Further data unknown.

PUG.—15 M. P. H. Displacement unknown. O. A. length 38", beam 11". Hull, planked mahogany. Further hull data unknown. Engine, poppet valve, 3-cylinder single-acting, ⅝" B. x ¾" S. Boiler U-shaped water tubes, ⅜" dia., with steam drum. Further data unknown.

GREYHOUND.—Speed not recorded. Displacement unknown. O. A. length 46", beam 12". Hull, runabout lines, sheet metal, Engine, slide valve, single-cylinder, doubt-acting, ¾" B. x ⅞" S. Water tube boiler. Further data unknown.

FIREFLY.—Speed not recorded. Displacement unknown. O. A. length 46", beam 12". Hull, runabout lines, sheet metal. Engine, slide valve, single-cylinder, double acting, ¾" B. x ⅞" S. Water tube boiler. Further data unknown.

BLUEBIRD I. — Displacement type hull. No further data available.

MARGUERITE.—Hypdroplane type hull. No further data available.

AMERICAN RECORDS

ELMIRA.—30 M. P. H. (Never been officially clocked.) Displacement 14 lbs. O. A. length, 39⅜". Hydroplane, single step, mahogany and aluminum. Further hull data unknown. Engine, 2-cylinder single-acting, ¾" B. Further engine data unknown. Water pump, ¼" B. x ⅛"—9/16" S., Ratio 1:5. Oil pump, ¼" B x ⅛"—¼" S., Ratio 100:1.

GADFLY.—22 M. P. H. Displacement unknown. O. A. length, 40", beam, 10". Displacement type hull, planked mahogany. Engine, 2-cylinder, 27/32" B. x ⅞" S. Further engine data unknown. Water tube boiler with 20 tubes. Further data unknown.

TORTOISE I.—7 M. P. H. Displacement 6 lbs. O. A. length 24", beam 5". Hydroplane, one step, wood and metal. Engine poppet valve, 2-cylinder, single-acting uniflow, 7/16" B. x ½" S. Flash type boiler. 6'—0". 3/16" and 2'—0" ¼" tubing. Blow torch, single nozzle, 2" dia. x 4" long. Gas tank 15 to 20 lbs. pres. Propeller 1¾" dia., 6" increasing pitch, 3 blades. Water pump 7/16" B. x adjustable stroke. Ratio 5:1.

SUNNY JIM.—12 M. P. H. Displacement unknown. O. A. length 39⅜". Hull data unknown. Engine piston valve, 2-cylinder opposed. ⅝" B. x ¾" S. Scott type boiler. 12 ⅜" tubes, 3½" x 10". Blow torch and propeller data not known. Water pump ¼" B. x ⅜" S. Ratio 3:1. Oil pump 3/16" B. x 5/16" S. Ratio 66:1.

XXXXXX.—21 M. P. H. Displacement 6¾ lbs. O. A. length 39⅜". Further hull data unknown. Engine, rebuilt simplex apr. 21/21. Flash boiler, further data unknown. Torch data unknown. Propeller, 3" dia., increasing pitch, 2 blades. Pump data unknown. Ratio 3:1. M. E. Volume 45, page 30.

DAISY.—21 M. P. H. Displacement 15½ lbs. O. A. length 39⅜". Hydroplane, single step type hull, wood, beam 10", depth 2". Engine, poppet valve, 2-cylinder single-acting, ¾"x¾". Flash type boiler, 28'—0", ¼" tubing. Blow torch, single burner, 2" nozzle, 2¼" dia. x 6" long. Gas tank 80 lbs. pres. Propeller 2⅞" dia., 9½" pitch, 2 blades. Pump ½" B. x ⅝" S. Ratio 4:1.

BAGIETTO XX.—16.3 M. P. H. Displacement 13 lbs. 3 oz. O. A. length 39⅜". Hydroplane, one step, type hull, mahogany; beam 10", depth 1¾". Engine, piston valve, 2-cylinder uniflow type, ⅞" B. x ¾" S. Flash type boiler, 20'—0" tubing, size unknown. Blow torch, nozzle 2" dia. x 6" long. Gas tank 80 lbs. pres. Propeller 3 5/16" dia., 10" pitch, 2 blades. Water pump ¼" B. x var. to ¾" S. Ratio 5:1. Oil pump 3/16" B. x var. to ½" S. Ratio 100:1.

T. N. T.—Speed not recorded. Displacement unknown. O. A. length 36", beam 8½". V bottom. Further hull data unknown. Engine, one-cylinder double-acting, 13/16" B. x ¾" S. Smithies type boiler. Further data unknown.

For N. Y. S. M. E. Boats see Modelmaker for October, 1926.

For records of Bluebird II, Pug, Gadfly, Hawk, Greyhound, Firefly, Bluebird I, and Marguerite, see Modelmaker for September, 1924.

Cannot vouch for the remainder of the timing of American Model Power Boats.

All English Power Boats were officially timed.

SUNNY JIM.—Particulars of the power plant will be found in the Model Engineer as follows: Engines, Volume 54, page 423; Boilers, Volume 52, page 154; Pumps and Torch, Volume 53, page 109.

All the data relating to the English Power Boats was found in the Model Engineer.

If any of our readers can supply us with data lacking in the above records, or data regarding other Model Power Boats not mentioned, we shall be very glad to insert the information thus supplied in a future issue of the Modelmaker, giving the author full credit for the same.

"O" GAUGE TRACK, CURVES AND SWITCHES

"Main Line" writes: We are bringing out curves and switches for the man who has a quantity of O-gauge track, yet wishes to operate scale models over it. By this means the Model enthusiast can keep his toy O-gauge electric straight track, simply using our curves and switches, which are interchangeable with toy track.

Our switches are constructed according to proper railway practice; that is, they are of the true "knife" pattern, the movement being through the spring of the blades. A regular railway type frog is fitted. The third rails are so arranged that with our special wide shoe it is impossible to stall or short-circuit an engine at any point on them (which cannot be said of the toy variety of switch).

Our track resembles regular toy tinplate track, but has three wooden ties per section, which form the base for supporting the third rail. In addition there are six tin ties. The third rail is solid copper, and joins by a simple spring action.

We are recommending that customers installing the track on a permanent foundation, such as shelving, sprinkle chicken grit along it for "ballast." There is one grade of chicken grit (obtainable at pet shops) that closely resembles regular rock ballast when correctly sprinkled along the track. In this way the rather unconventional ties of tinplate track can be concealed, and a roadbed approximating conventional practice obtained.

We are supplying switches with either a hand lever, or a right-angle crank for working from signal boxes.

An accurately ruled sheet or two of cross section paper is often found very useful when anyone wants to make a quick sketch of a piece of machinery or some castings, or other device. The Handy Sketching Book is just the thing to carry in your portfolio for such odd sketches, as it is accurately ruled 8 squares to the inch, printed in blue ink on both sides of the paper, size of page, 5″x8″.

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Akron Association of Model Engineers, Sec., Mr. R. W. Jacobs, 115 North 16th St., Kenmore, Ohio.

Boston Society of Model Engineers, Mr. J. L. Brackett, 13 Charles Street, Wakefield, Mass.

Boys' Steam Locomotive Club, Mr. Bill Neisel, 56 Tennis Place, Forrest Hills, L. I.

Canadian Model Engineering Club, The Sec., 122 Pacific, Toronto, Ontario, Canada.

Canadian Model Engineering Club, Montreal Branch, Mr. F. L. Lewis, 139 Dobie Avenue, Mount Royal, Montreal, P. Q., Canada.

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Model Sailing Yacht Club, Providence, R. I.

Montclair Model Engineers' Club, Sec., Mr. J. B. Rettallack, 65 Dunnell Road, Maplewood, N. J.

Prospect Park Model Yacht Club.

New York Society of Model Engineers, Sec., Mr. A. A. Singer, 15 Moore Street, New York, N. Y.

San Francisco Model Power Boat Club, Sec., Mr. Harry Cook, 1806 Laguna St., San Francisco, Calif.

Saint John Model Boat Club, Mr. Harry Ervine, Telegraph and Times Office, Canterbury Street, St. John, N. B., Canada.

Toledo Model Yacht Club, Mr. G. A. Heinle, c/o Meilink Steel Safe Co., Toledo, Ohio.

We would like to receive the names and addresses of the Secretaries of any of the above clubs where they are lacking, also any corrections or alterations to the above list as well as the names with the secretaries and their addresses of any new clubs or older organizations that we have not listed. Any reliable information our readers can send us will be very much appreciated, as we wish to make this list complete and up-to-date for the benefit of all concerned.

Mr. Isaac Purington, 7762 Windsor Street, South Vancouver, B. C., Canada, writes us that he has been getting together a number of gentlemen interested in model engineering, and they are planning to organize a Model Engineers Society. Any of our readers residing within a reasonable distance of this gentleman should get in touch with him, either personally or by correspondence, and get all the particulars about this new Society. We hope Mr. Purington will have a good many supporters in this good work.

If there is any information you wish to get, write to the Editor.

2-CYLINDER DOUBLE ACTING HORIZONTAL STEAM ENGINE

This little Engine was built by our old friend, Mr. W. H. Buckley of Guysborough, N. S. He is quite a genius in making working models out of odds and ends from his scrap box. The design is his own.

The top of wooden base is 10′ by 4¾″.

The two cylinders are pieces of smooth brass tube ⅞″ bore with a stroke of 1½″. The cylinder heads are pieces of sheet brass fastened on with small screws and made steam tight. The two cyinders are securely attached to a thick piece of brass. Four pieces of strip brass are fastened to the cylinders, the ends of which are bend at right angles to make firm supports, there are screwed to the wooden base. Two pieces of small brass tube, with stuffing boxes attached, are secured to the cylinders for the piston rods to work in.

The slide valve ports are built up. The steam chests are dug out of two brass bolts, with pieces of small brass tubes inserted at each end of each cylinder for the valve rods to work in. The piston guide rods are supported by two pillow blocks. The crankshaft is made from a stiff piece of iron wire carefully bent to give the proper throw.

The flywheel is 4¾″ in dia. of cast zinc and lead, with iron band bent around the outside of the rim.

The supports for the flywheel are each built up from two pieces of thick brass and fitted with lubricators.

The Engine has been under steam running a small dynamo and worked very well indeed. In the November 1924 issue of the Modemaker is a description of a Model Paddle Wheel Engine built by Mr. Buckley.

The Gerold Co. have taken up the sole selling control of the following Light Machinery suitable for the Modelmaker's Workshop. Universal Ball Bearing Bench Circular Saw table 14″x18″ taking saws up to 9″ dia.; also a larger size with a table 18″x22″ taking saws up to 12″ dia., operated by A.C. electric motor from house lighting circuit. Foot, or Power, driven Scroll Saw for almost any kind of work; just the thing for model boat hull shaping out. An ingenious new combination tool for grinding, buffing, polishing and drilling. It consists of a double-ended spindle electric motor with attachments to accomplish the variety of work mentioned above; also base stand, wheel guards and tool rests. The advantage to the Modelmaker is that he can purchase the motor and any attachment to suit his special requirement.

When writing to us about your change of address we would ask that you kindly mention not only your new address, but your old address, also state which magazines you subscribe for. Our subscription cards and stencils are all classified under states alphabetically. Compliance with the above request will simplify our work in looking up subscription cards.

The three bound volumes of the Modelmaker contain many articles on American Modelmaking. They would make excellent Xmas gifts to those interested in this work.

MODEL ENGINEER,

VOL. 29

Model Enginer, principal contents of Volume 29. Model Yacht Minerva. Grinding, Polishing and Lacquering for Model Engineers. Clock Repairing. Tesla Coils. Model Power Boat Building. Locomotive Notes. Model Beam Engine. The Design of Small Dynamos. Exhibits from the Model Engineer Exhibition. A Simple Method of Projecting Sun Dials. An Automatic Wind Electric Plant. A Model Railway System. N. E. R. ¾" Scale Locomotive. File Handles and Holders. Automatic Expansion Gear for Model Engines. Electric Welding. Marine Models. Forging Small Tongs. An Under Type Steam Engine with Boiler. How to Build a Model Hydro Aeroplane. Grinding Lawn Mower Cutters in the Lathe. Model Yacht Racing. The Utilization of Our Natural Sources of Energy. Hints on Painting Model Boats. Southport Miniature Railway, 15" Gauge. A Scale Model Railroad Turn Table. Construction of Bellows for Blow Torch. Some Attachments for a Small Planer. 2—6—0 Caledonian Railway Locomotive. Small Gyroscopic Mono Railways. Model of G. W. R. Cross Channel Passenger Steamer. Ornamental Glass Grinding. Backing off Milling Cutters in the Lathe. The Construction of Mr. W. J. Daniels' Half-Rater "Onward." 15" Gauge 4—6—2 Locomotive "Gigantic" Pacific Type. A 5-cylinder Rotary Petrol Engine. The Length of Lathe Driving Belts. A Model Beam Engine. Design for Weight-Driven Petrol Air Gas Plant. A 3" Center Back Gear Lathe. An Automatic Electric Striking and Chiming Gear. Model of Steamship "Great Eastern." The Proportions of a Pantograph. Motorcycle Notes. Methods of Supporting Line-Shafting. A Cheap Grinder for the Lathe. ½" Scale Tank Locomotive. Microscope Accessories—Lamps. The Divining Rod—Finding Water. The Measurement of H. P. and Brake H. P. Vise, Clamps, and Fittings. Speed Boat Designs. Turning Cranks on the Lathe. Torpedo Destroyer "Petrol." The "A. M. R." Model Railway. A Simple Type of Ignition for Small Stationary Petrol Engines. A 15" Gauge Atlantic Locomotive. Some New Gyrostats. Superheated Tank Locomotive 4—6—2. A Steam-Driven Monoplane. Model Atlantic Type Locomotive. Expanding Locomotive Boiler Tubes. New Type of Tank Engine with 3 cylinders. Standard Locomotive Stoker. Model Horizontal Engine and Boiler. A complete Electric Lighting Plant with half H. P. Gasolene Engine. A Model Motor Car. Gyroscopic Stability. A Model Tramp Steamer. A 1½"x 1½" Single Acting Steam Engine. An 8-ft. Wind Mill. Breaks for Spark Coil. The Gordon Model Railway. Taper Turning Attachment for Engine Lathe. Articles on Wireless. Many Miscellaneous Subjects. Society and Club Doings. Book Reviews. News of the Trade. Title Page and Index. 628 pages. Hundreds of illus.

Send us a stamped and addressed envelope for list of Am. Model Supply houses.

MODEL BOILERS

To the Editor, "Modelmaker."

Dear Sir: Since this country has taken up and is progressing in Modelmaking and in which all of us wish to cooperate in brotherly fashion, I take leave to append my views briefly on the above subject and as follows:

We as a body are not merely Model enthusiasts, but have some claim to science, and with this in mind, how can we conscientiously condone to brass boilers and steel stays, or even steel boilers, bearing in mind that a Model boiler spends 90% of its life lying idle and therefore supremely prone to corresion on the inside, no matter how carefully treated.

There is only **one** safe and sound material for Model boilers, namely copper, and the trumpery plus cost of this material is insignificant in these **little** boilers, copper is ductile, easy to manipulate, and once made into shape is practically immune from deteriorations in a person's lifetime.

Brass tubing, on the other hand, has been known to be laminated and boilers made of this material are a questionable proposition.

To make a boiler to sell and to make one for real safe and serviceable use are two different things; but we as a body should not lay ourselves open to criticism by departing from scientific facts embraced in engineering to date—but rather follow strictly upon scientific lines and show people that we aim at something higher than mere "toy modellers."

To the Trade.

In my opinion Modelmaking in the U. S. is only in its infancy. European Modelmaking firms, despite bad times, have built up enormous businesses. The Trade must cooperate with the buyer and not be too eager for quick profits—**that will come** in due time.

Yours cordially,

P. W. WILSON,
1222 West Clifton Blvd.,
Lakewood, Ohio.

BOOK REVIEWS

Workshop Operations and Layouts for Economic Engineering Production. By Philip Gates. 200 pages; ill.; cloth, $2.50.

This book is very easy reading, and the principles are clearly illustrated. To facilitate the use of this book it is divided into twelve chapters. These chapters illustrate just how economic operations can be performed on automatic machines, drilling and tapping machines, milling machines and milling operations, press work, rechucking automatic work, turret work, continuous vs. station milling, multiple drilling and multispindle work, cylindrical and surface grinding, broaching and broaches vs. reamers. The production manager and engineer will also find in this book what can and what can not be expected of machine tools. Also there will be found guidance in determining the necessary quality, materials, modifications necessary to facilitate machine shop production, and all the data required for keeping track of costs, time sheets and records of various sorts.

K. H. B.—Yes, there is considerable difference between Wood Alcohol (pyroligneous acid, Methylated Spirits, as it is known abroad) and Ethyl alcohol (or white spirit), which is a distillate from grain, potatoes, molasses, sugar cane refuse, fruits and other farm produce. A very extensive and expensive plant is required for the manufacture of Wood Alcohol, while Ethyl Alcohol can be made in simple apparatus. Both will burn equally well under the boiler of your locomotive or steam engine, or as fuel to run an internal combustion engine.

Immense quantities of Ethyl Alcohol are used in the Industries yearly; as a solvent for most of the drugs used in medicine and other medical preparations; with a suitable denaturant added in the manufacture of rubber goods, fine varnishes, paints, lacquers, textile industries, tobacco manufacture, and many other uses. It is also being used abroad for motor fuel. On some of the Sugar Plantations in Cuba it is being made from the crushed cane refuse at about 4 cents a gallon, and is used in the small gasoline locomotives for hauling the cars of sugar cane.

One of the largest distilleries in Illinois made the White Spirit from grain at a cost of less than 5 cents per gallon and the refuse mash was dried and compressed into cakes for winter food for cattle. Wrights book on the Manufacture of Industrial Alcohol fully describes and illustrates the various processes.

With the ever-increasing demand for gas engine fuel and the present high price for gasoline there should be a big field for white spirit for power purposes. It can safely stand a much greater compression than gasoline as its flash point is about 135°F, while the gasoline flash point is between 68-75°F, according to its quality.

White Spirit gives a beautiful white light (very actinic) when burned in a suitable table lamp having a Wellsback mantle.

It can also be used for cooking. It is a much less hazardous fire risk and safer to transport than gasoline. As it is manufactured from produce that can be continuously produced in any part of the world in unlimited quantities there is never any likelihood of there being a shortage of raw materials from which it is made. On the other hand, the demand for gasoline in the last few months has been considerably greater than the amount of oil obtained from the wells during that period, and in a number of cases many wells have given out.

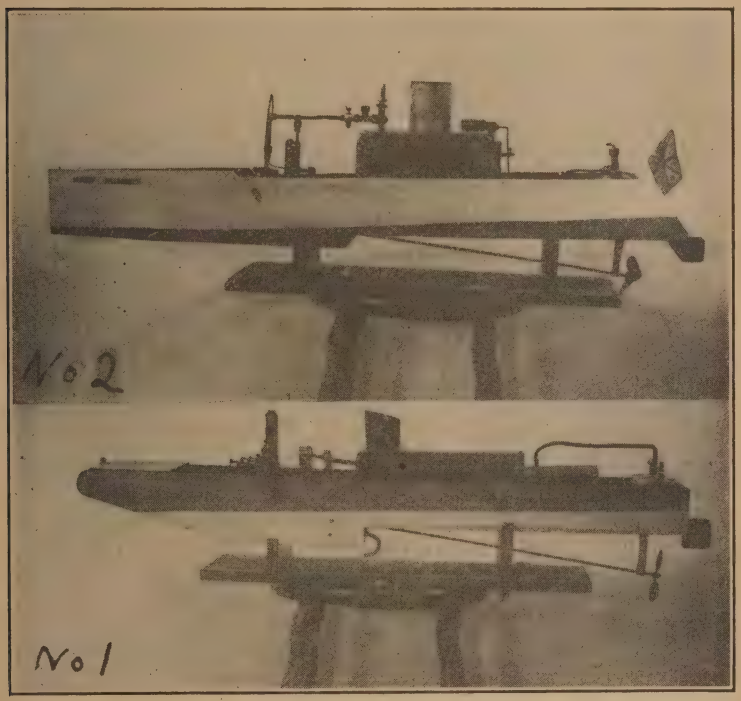
Mr. A. Willard, Chicago Society of Model Engineers, writes that the Society will hold their Annual Exhibition of Models at 846 Rush Street, Chicago, Ill., on December the 1st to the 4th inclusive. We hope that all our Chicago friends will make a point of attending one of these days and getting acquainted with the boys. The members of the C. S. M. E. have produced some fine specimens of model work, so we believe a visit to the coming exhibition will well repay those that make the effort.

When writing for information please enclose stamped and addressed envelope.

TWO CANADIAN MODEL POWER BOATS

BUILT BY MR. RALPH SKINNER

I enclose photos of two Model Power Boats I have built. Each of these models took six months to construct, including the power plants. The hulls are both of the hydroplane type. One has a straight stem with a sharp bow, the other a punt bow. In both cases I have placed the engines for'ard and the blow torch aft of the boiler. I have had a good deal of enjoyment in their construction (the two propellers were the only parts I did not make) and give the following particulars and data in the hope that it will prove of value to some other reader who is planning the construction of a Model Power Boat.



No. 1—Minnie Mary

Length on deck, 36″
Beam, midship, 8″
Length from bow to step, 17″
Length from step to rudder post, 19″
Hull, built up of pine, 3/16″ thick
Engine, 2-cylinder, single-acting, slide valve
Cylinder, ¾″ bore x ¾″ stroke
Displacement lubricator
Steam gauge on steam line
Flash steam boiler, 18′—0″ ¼″ copper tubing
Length of boiler, 10″
Width of boiler, 3⅝″
Height of boiler, 3¾″
Steam pressure, about 40 lbs.
Fired with blow torch
Feed water pump, ¼″ dia. runs off of tail shaft with 4 to 1 gears
Capacity of fuel tank, 1 pint
Boat will run about 25 minutes on one charging.
Stern bearings, brass
Size of propeller, 3″
Size of rudder, 2″x2″, Russian iron.

No. 2—Mary Minnie

Length on deck, 37″
Length W. L., 38½″
Beam midships, 8½″
Length from bow to step, 19″
Length from step to stern, 20½″
Hull built up of pine 3/16″ thick
Engine, 2-cylinder, single acting, piston valve
Crankshaft, built up, 3/16″ dia.
Cylinders 11/16″ bore x ⅞″ stroke
Cylinders of steel
Pistons, aluminum, brass rings
Steam chest, cast iron
Tobin bronze valve
Engine has aluminum base
Displacement lubricator
Boiler, water tube, 1/16″ copper
Boiler tubes, 4′—2″ ¼″ copper tube, brazed on bottom
Stay rod through center of boiler
Boiler, fittings, safety valve, throttle
Steam gauge
Filling plug
Length of boiler, 9¼″
Width of boiler, 3¼″ dia.
Width of boiler casing, 4″
Height of boiler shell, 5½″
Fired with blow torch
Boiler capacity, 1 pint
Fuel tank capacity, 1 pint
Steam pressure, 50 lbs.
Boat will run 30 minutes on one charging
Propeller, 3″ dia., 2-blade
Size of rudder, 2″x2″, Russian iron
Both of these boats steam well, but I have not made any records of their speeds.

Mr. Thomas Bray informs us he has been fully occupied for the last few weeks with the construction of a ½″ Scale P. R. R. K. 4s 2½″ Gauge Steam Locomotive, with Walschaert valve gear; also a ½″ scale B. & O. Mountain Type 4—8—2 Steam Locomotive 2½″ gauge, with the Baker Valve Gear.

Mr. Jesse Menendez, 239 E. 13th Street, New York, and a few other friends, who have all been students in the Baron de Hirsch Trade School, are working up a little Modelmakers' Club. He would be glad to hear from any readers in his district interested in this work.

QUESTION BOX

Please address replies to Editor of the Modelmaker.

F. W. S.—Would like to know where he can get plans for the construction of historic ships for ornamental purposes.

H. S.—Would like to know where he can get small compressed air engines for model aeroplanes.

W. L. M.—I am an instructor in High School teaching Electricity and would like to hear from some firm which can supply motor stampings, parts, etc., in quantity lots. Would also like to get a drawing to detail of a 280 Mogul Locomotive with Walschaert Valve gear and piston valve for an amusement park.

Mr. J. W. C. Corbusier, Hudson, Ohio, has all the lines and sail plans for a model of the Great Republic, but he lacks the plans and details of deck houses, boats and other deck fittings. If any of our readers can supply the information required, it will be very much appreciated.

The Editor, the Modelmaker.

Dear Sir: In reply to Mr. B. Read, Jr., of 3230 Euclid Heights Blvd., Cleveland Heights, Ohio, I am enclosing with this letter a record of Model Power Boats, both American and English.

When finished, please return record to me, as it is taken from my own personal files.

Trusting that this answers Mr. Read, Jr., I beg to remain,

F. D. GRIMKE,
987 Madison Ave.,
New York, N. Y.

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